NOVEMBER 1959

The Controller

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CONCEPT OF MODERN CONTROLLERSHIP
of Controllers Institute of America

1. To establish, coordinate and administer, as an integral part of management, an adequate plan for the control of operations. Such a plan would provide, to the extent required in the business, profit planning, programs for capital investing and for financing, sales forecasts, expense budgets and cost standards, together with the necessary procedures to effectuate the plan.

2. To compare performance with operating plans and standards, and to report and interpret the results of operations to all levels of management and to the owners of the business. This function includes the formulation and administration of accounting policy and the compilation of statistical records and special reports as required.

3. To consult with all segments of management responsible for policy or action concerning any phase of the operation of the business as it relates to the attainment of objectives and the effectiveness of policies, organization structure and procedures.

4. To administer tax policies and procedures.

5. To supervise or coordinate the preparation of reports to governmental agencies.

6. To assure fiscal protection for the assets of the business through adequate internal control and proper insurance coverage.

7. To continuously appraise economic and social forces, and government influences, and interpret their effect upon the business.

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The Controller

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Correspondence

CAN YOU HELP?

Editors, THE CONTROLLER:

This letter is in the form of a question I would like to put to the readers of THE CONTROLLER.

Many accounting textbooks and dictionaries mention *conversion costs* and define them as the sum of direct labor plus overhead. Now, this notion is quite close to that of *value added* by manufacturing or marketing: both refer to the economic utilities added to the raw materials, parts, supplies and utilities bought from suppliers.

Most accounting textbooks and dictionaries stop there, however—at least I have been unable to trace any use of conversion costs by accountants or managers.

Do any of the readers of THE CONTROLLER *know of firms who collect and use these costs or of papers which treat of the subject?*

I would appreciate hearing from them.

I am quite interested in this concept since I plan to write my doctoral thesis on the subject of value added by marketing here at the University of Washington where I am working towards a doctorate in business administration while on a leave of absence from the University of Portland.

J. BODDEWYN
Instructor in Business Administration
6315 Radford Drive
Seattle 15, Washington

A carbon of any answerer's letter would be appreciated by us for our files or for passing the information on to others through the columns of this page.

—The Editors

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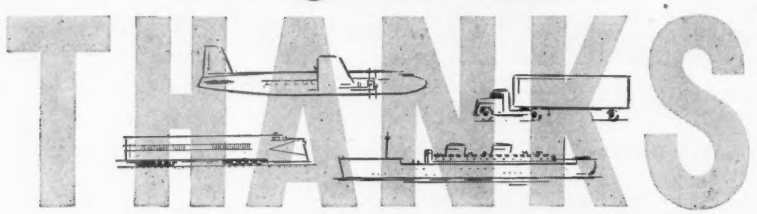

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Editors, THE CONTROLLER:

May we have permission to reproduce all or part of the following article published in the September 1954 issue of THE CONTROLLER—"The Planning and Control Concept" by James L. Peirce.

It is our intent to use this article in a readings book in the general area of administrative controls. Included in this volume will be substantive readings featuring information or insight into administrative controls. It is the aim of the authors, Professor B. C. Lemke and myself, to include materials which are in the frontier areas of administration. Thus far, we have reviewed several hundred articles and are requesting permission to reproduce this material with proper credit.

JAMES DON EDWARDS
Professor and Head
College of Business and Public Service
Michigan State University
East Lansing, Michigan

Reprints of Mr. Peirce's article mentioned are available at 40¢ each. Address Reprints, THE CONTROLLER, *Two Park Avenue, New York 16, N. Y.—The Editors*

FOR WHOM IS THE CONTROLLER PUBLISHED?

Editors, THE CONTROLLER:

This is a general question regarding the contents of THE CONTROLLER. *Is your editorial policy to satisfy the interests of controllers only or do you go further than this in your coverage?*

EJK
New York

A similar question was put to us recently in a direct personal way. It had to do with the proportion of articles in THE CONTROLLER *which were of definite use to financial officers other than controllers, and specifically to treasurers. It had been the questioner's impression that inasmuch as the magazine is set up to serve the particular aims spelled out in the concepts of modern controllership of Controllers Institute (see page 495 of this issue), it does not make any significant attempt to satisfy the needs of financial administrators in general.*

In reply, we made it clear that the editorial policy of THE CONTROLLER *was to cover a wide range of important financial subject matter. One reason for this is that controllers themselves must draw upon a broad fund of information and ideas in order to carry out their full responsibilities as planners and coordinators. A second reason is that the approximately 50% of our readers who are not members of the Institute embrace all categories of financial executives. Their interests extend across the entire spectrum of financial administration.*

So that we could make our answer a comprehensive and detailed one, we decided to have the contents of the magazine analyzed carefully for the period from January 1956 through September 1959. This meant screening the three-to-five feature articles we ordinarily carry in each month's

(Continued on page 498)

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issue. The survey covered 45 issues and a total of 156 articles. Findings were as follows:

76 articles (approximately 50%) were of basic interest to corporate controllers;

17 articles (approximately 11%) were of basic interest to corporate treasurers;

57 articles (approximately 35%) were of basic interest to both controllers and treasurers; and

6 articles (approximately 4%) were of basic interest to corporate officers generally.

Associated with this record of broad appeal is the fact that our subscribers to the magazine—nonmembers of Controllers Institute—have renewed their subscriptions at the unusually high rate of better than 70% for the past ten years. Very few publications of any description approach this rate of subscription renewals. In order to satisfy our nonmember readers over this extended period, we have consistently taken up many, varied aspects of financial management. Any one or two copies of THE CONTROLLER *picked up at random may appear to feature material of stronger interest to one category of corporate officers than to others. But the record over the years makes it plain, we believe, that we publish a magazine which higher-level financial executives in general find regularly useful.* —*The Editors*

SELECTED READINGS

Editors, THE CONTROLLER:

Two articles by members of our organization appeared in THE CONTROLLER during the year 1958, as follows: "Cost Accounting and Computers" by Maurice S. Newman (May 1958) and "Setting a Standard for Your Company's Return on Investment" by Harvey O. Edson (September 1958).

As has been our practice for the last few years, we are publishing in book form some of the papers prepared by members of our organization that have either appeared in professional or technical journals or have been presented personally before public groups. The title of the book will be *Selected Papers (Year) Haskins & Sells.*

The books will be distributed principally within our own organization and to a limited extent to certain of our clients and others.

We should appreciate having your permission to reproduce the articles mentioned above in our Selected Papers for 1958.

HASKINS & SELLS
Certified Public Accountants
New York

Editors, THE CONTROLLER:

In the December 1958 issue of THE CONTROLLER there was an article by D. Ronald Daniel of the New York office of McKinsey & Company entitled "EDPM—Getting Past the Barriers to Success." We would like your permission to reproduce 25 copies of the article for use within our company.

B. D. BECKERLEGGE
Pacific Finance Corporation
Los Angeles, Calif.

Editors, THE CONTROLLER:

If available would you please send me 10 copies of "Evaluation of Operations by Management" by R. G. Lochiel published in the August 1959 issue of THE CONTROLLER. I would like to use them in connection with one of my classes.

And, incidentally, may I say that as a subscriber to your journal, I find it most useful.

PAUL P. VAN RIPER
Professor of Administration
Graduate School of Business
and Public Administration
Cornell University
Ithaca, N. Y.

LITTLE BOUQUETS . . .

Incidentally, I have just started to read your magazine and find it extremely worth while—B.C.O'B

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Should You Set Up a Finance Subsidiary?

Allen H. Seed

The pros and cons of setting up a finance subsidiary in today's money market

Several leading companies have set up captive finance subsidiaries in the past few years. Tight money has undoubtedly had an influence in this development. So also have changes in consumer attitudes and marketing techniques had a bearing. In any event, finance subsidiaries have become an important device in the corporate picture. As such they merit consideration by the controller and other top financial executives. This article covers the steps which often lead up to the establishment of a finance subsidiary. Alternative courses of action, economic characteristics, possible applications, and pitfalls of this type of device will be discussed. —THE AUTHOR

HOW FINANCE SUBSIDIARIES ARE BORN

Finance companies are typically viewed as a merchandising tool. They are born because of pressures from the market place. When a manufacturer sells to a dealer organization who in turn sells to the consumer, these pressures often take two forms. The dealer may want terms to finance the inventory on his floor. The dealer may also want a retail finance plan in order to make it easier for him to sell to the consumer. These pressures are brought back to top management by the salesman. The salesman says that longer dating and a retail finance plan are needed to "meet competition." Here the pressures from the market place meet the limitations of the manufacturer's financial resources and often fundamental reluctance to expand credit.

There are two natural reasons for this reluctance. The first is economic. Top management wonders whether more money tied up in receivables will produce enough additional profit to justify the investment. They also cast a jaundiced eye at the risks involved for no manager is interested in writing off bad debts or repossessing merchandise. Furthermore, the manager realizes that expanded credit means substantial administrative costs. The dating plan must be explained to customers, credit must be approved, contracts must be signed, records must be maintained, the merchandise must be counted and checked and collections must be effected. All these things cost money and must be offset by additional sales volume.

The second reason for reluctance to expand credit is largely philosophical in nature. Credit still often creates an image of the usurious money lender of Biblical times and is inconsistent with the Protestant ideal of saving before buying.

Many industrial managers believe that they are solely in business to make and sell their products. They believe that when they sell their product they should be paid for it. They aren't bankers and they don't want to become bankers. If the customer doesn't have the money to pay for the product, these managers believe that the customer should make his own arrangements to obtain the needed cash. After all, the customer's local banker knows him best, can service him less expensively than the manufacturer and should provide for his financial needs. This is all very well.

But what is a manufacturer going to do if competition is offering longer and longer dating and if many local bankers are loaned up or are disinclined to finance local dealer inventories?

Very often this tendency toward long terms seems to be almost proportionate to the health and maturity of the industry concerned. In the less prosperous farm implement industry, for example, dating is traditional. On the other hand, the automobile manufacturer expects, and receives, his money when the automobile is

ALLEN H. SEED is a graduate of Yale University (B.S. Ind. Adm.—1946). His business experience includes association with Minneapolis Honeywell Regulator Company, Minneapolis, Minn.; Shell Development Company, Emeryville, Calif.; Superior Separator Company, Hopkins, Minn., for whom he organized a captive finance company; and McKinsey & Company, San Francisco, Calif. In September 1958, Mr. Seed rejoined Superior as secretary and treasurer. He is currently vice president of the Minneapolis Chapter, NAA, and a member of Controllers Institute of America.

delivered to the dealer. Other industries fall in between, but as they mature, the pressure for terms seems to increase.

As the pressure for terms builds up, the manufacturer can do one of five things:

1. He can do nothing.
2. He can finance his customers himself with borrowed money or with extra cash if he has it.
3. He can turn to his banker or the customer's banker and suggest that it is the banker's job to provide credit.
4. He can work with an existing finance company.
5. He can set up a captive finance subsidiary.

Although setting up a captive finance subsidiary is one answer to pressures for terms, each of the other alternatives should be considered in turn. Two fundamental questions must first be answered:

Do we have a real need for an extended dating or finance plan of some sort?

And, if so, what other ways are there of solving our problem?

THE MERITS OF NO ACTION

Doing nothing about terms will limit the amount of receivables that are employed in the business, but *will it solve the problem of meeting competition?* There are two very real points involved here. First, *are expanded terms really needed?* Terms are not the only way of meeting competition. Often a need for terms can be symptomatic of a sick product line or market. Perhaps it is to the manufacturer's best interests to concentrate his capital on product or market improvement and leave the area of concessions in terms to his competitor. Experience has proven again and again that over the long term there is no substitute for a "better mouse trap." An expansion of terms may simply prolong the agony because this is an area where well-financed competition can do battle with the stroke of a pen. A hard look at product line or the company's marketing techniques may provide the real answer to this question.

Second, *are expanded terms worth the price?* I doubt if there are many good salesmen who would be at loss for an example of how they could have gotten this or that order if only they could have given some extra dating. When a manager is hungry for business, sometimes these examples can have a particularly stirring appeal. This is where the controller should come in.

How much more capital will be required?

Will the additional profit less administrative costs provide an attractive return on the new capital?

If not, what are the alternatives?

Very often objective answers to these questions will scotch a clamor for terms and prevent costly mistakes.

THE DO-IT-YOURSELF APPROACH

Let's assume that an expansion of terms promises to be worth while. There is much to be said for simply changing the terms of sale on an open-account basis. This alternative may be especially attractive if it will put otherwise unused cash to work within the limits of sound credit management. The alternative may also be desirable if a limited amount of cash must be borrowed for this purpose. A small or medium-sized company may not have the volume to justify any other course of action. An extension of this sort can be uncomplicated and easy to manage. However, the size of the amount of outstanding receivables and other demands for capital may cause this course of action to be undesirable. If so, we might well turn to our third alternative.

THE ROLE OF THE BANKER

This is a natural place for a manufacturer to turn. Bankers are in the business of lending money. They are equipped to review credits, keep records, and manage collections. They usually also do their best to accommodate good customers. Several arrangements are possible. They might discount receivables, loan money against receivables, and they do a substantial installment loan business of their own. Banks are, in fact, competitors of finance companies.

Another variation of this approach is to look to the customer's banker. One manufacturer used this approach very successfully. The manufacturer's executives called on their key customer's banker. They explained that they had confidence in the ability of this customer and that they felt it was to the customer's best interests to carry a larger inventory of their product line so that the customer could do a more effective job of merchandising. They also reminded the banker that because of his nearness and existing banking relations they knew he was in a position to more efficiently serve the customer's account than they or an outsider would be. In several cases the customer's line of credit was extended although occasionally the manufacturer was asked to guarantee the paper.

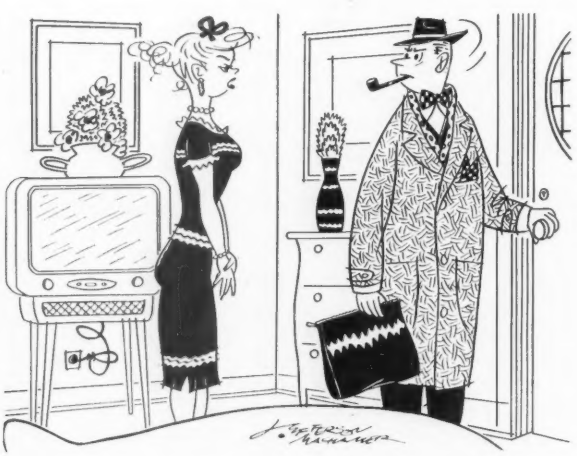
Unfortunately banks too have limitations which must be considered:

1. They are local. They are usually not in a position to service loans beyond the range of their immediate market area. Unless several banks are brought into the picture, this might not be a satisfactory solution for a manufacturer with national distribution.

2. They are somewhat inflexible. Banks must evolve plans which are oriented to banking regulations and policy. They have examiners to satisfy. Sometimes these plans do not fit the needs of specific industries.

USING AN INDEPENDENT FINANCE COMPANY

One way of getting around limitations which arise from the local characteristics and the inflexibility of banking institutions is to work with a national independent finance company. There are several excellent companies in this field. They have



"Lend me ten dollars, hon—I'll return it the instant I get your pay envelope!"

offices throughout the country. They also offer plans which are built around the concept of merchandising products rather than loaning money. They offer professional credit management and in many cases can do a better job for the manufacturer than he or his bank can do. This avenue should be explored before any company sets up its own finance subsidiary.

There are two possible disadvantages in this course of action, however. First, independent finance companies are seldom interested in handling wholesale paper covering merchandise which is on the floor of dealers unless this wholesale paper leads to a source of retail paper. The reason for this is that wholesale paper by itself commands lower interest rates than retail paper. Unfortunately, the manufacturer's problem is often primarily one of the inventories of his dealers. If no retail paper is involved, this course of action can leave a major part of his problem unsolved.

A second possible shortcoming of independent finance companies is the fact that they are in no way identified with the manufacturer. A manufacturer has no control over their activities. This situation may be undesirable from a point of view of customer relations. Although the implications of this shortcoming may in practice be more imaginary than real, some managers feel that this is a pertinent consideration.

IMPORTANT CHARACTERISTICS OF FINANCE COMPANIES

The key to a finance company is the fact that lending institutions will typically provide a much larger proportion of the capital required by this type of organization than they will to a manufacturer. This is important because it provides greater leverage on the equity capital which is employed in this way.

For example, well over 50 per cent of the total assets of the typical manufacturing company is financed by equity capital. This may be compared with the typical industrial finance company where about 20 per cent of the assets is financed by equity and about 70 per cent is financed by debt. Of the finance companies' debt, 40-65 per cent is usually financed short-term money while 15-35 per cent is financed by subordinated and long-term loans. A manufacturer usually aims to clean up his short-term debt for a period at the end of each year. A finance company rotates its debt; it does not eliminate it.

I have asked several bankers why these differences in capital structures exist. *Why do they limit the borrowings of a manufacturer to about one dollar for every dollar of equity in the company?* But, then, this same manufacturing company can set up a finance subsidiary and the lending institutions will loan them three or four dollars for every dollar of equity.

SOME WELL-KNOWN COMPANIES THAT HAVE CAPTIVE FINANCE SUBSIDIARIES

Admiral Corporation
Allis-Chalmers Manufacturing Co.
Armstrong Cork Company
Armstrong Rubber Company
Beech Aircraft Corporation
Borg-Warner Corporation
Carnation Company
Carrier Corporation
J. I. Case Company
Caterpillar Tractor Company
Cesna Aircraft Company
Clark Equipment Company
Cockshutt Farm Equipment, Ltd.
Consolidated Foods Corporation
Dan River Mills, Inc.
Davidson Bros., Incorporated
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Sears, Roebuck & Company
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Simmons Company
Sperry Rand Corporation
Standard Oil Company (N. J.)
Superior Separator Company
Texas Industries, Incorporated
Tilo Roofing Company, Inc.
United Merchants & Manufacturers, Incorporated
Walter Kidde & Co., Inc.
Weatherhead Company
Westinghouse Electric Corporation
Whirpool Corporation

And all this is done without a substantial effect on the parent company's line of credit. I have received several answers to this question. One of the reasons for this difference is obviously due to the current nature of the assets of a finance company and the fact that finance companies have historically done a good job of paying back their debts. Finance companies have maintained a continuity and growth of profit over a long period of time. Also, when a finance subsidiary is set up, those assets which account for these earnings are separated from other operations. They are supported by chattel mortgages, conditional sales contracts, and other legal instruments. A finance subsidiary is often managed as a business in itself rather than as one function of a manufacturing organization. All these differences have a bearing on the willingness of the banks to loan more money to a finance company.

POTENTIAL APPLICATIONS OF A CAPTIVE FINANCE SUBSIDIARY

Here are some of the ways that a captive finance subsidiary can be used so as to take advantage of the leverage in its financial structure:

1. *A finance subsidiary can provide capital for longer-term receivables.* In a seasonal business, such as construction machinery, farm implements, powered lawn mowers and cameras, a subsidiary of this sort can be used to finance distributor or dealer inventories until the normal time of sale. This can result in less cyclical production for the manufacturer and earlier deliveries to the point of sale.

2. *A finance subsidiary can provide a source of retail financing.* This can be used as an effective marketing tool. As we well know, installment purchase plans have been successfully used to merchandise almost every kind of "big ticket" item. Also, the fact that retail paper typically commands higher interest rates and service charges than is obtained from wholesale paper is not to be overlooked.

3. *A finance subsidiary can be used to finance products leased to others.* Several manufacturers of capital equipment have found leasing plans to be an excellent supplementary merchandising tool. In this case, the manufacturer would sell the equipment to its finance subsidiary. The finance subsidiary would, in turn, lease it to the customer. This has one important shortcoming. Because the manufacturer would create a tax liability on the profit at the time of sale—instead of over the term of the lease—a decision to use a finance subsidiary in this way would depend on being able to obtain a return on alternative uses of the capital which would compensate for this disadvantage.

(Continued on page 538)

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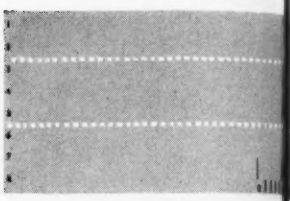

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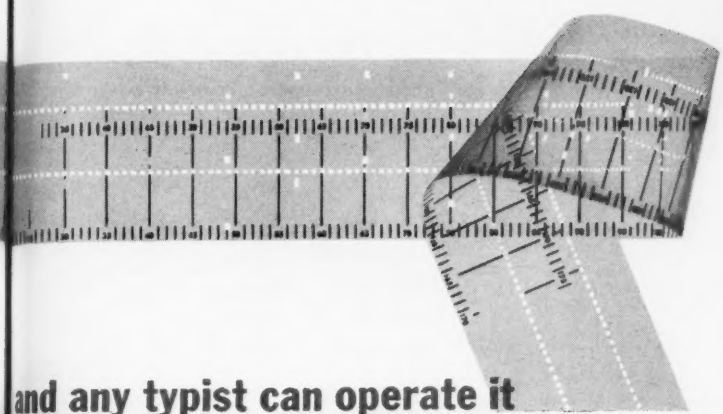

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Reporting of Taxes in Annual Reports

H. W. Kull

How management can have the financial statements report a company's entire tax bill whatever form the levy may take

TAX REPORTING

There appears to be a growing feeling among controllers in industry that we have not been doing an effective job in emphasizing to shareholders, and to the public in general, the total tax revenues that business is providing to all levels of government. This is due in large part, we believe, to shortcomings in the conventional form of income statement most of us have been using over the years.

Let us look at a pro forma income statement used by a typical oil company in its 1957 annual report *(Chart A)*. You will notice it is the conventional format that has been used by most companies.

Two items of taxes are featured in this income statement—income taxes of $40 million and taxes other than income taxes of $15 million. Together, then, total taxes of $55 million are reported.

This same company, in notes to its financial statements *(Chart B)*, gave a supplementary analysis of all taxes and other payments to governments aggregating $230 million for the year, or $175 million more than that featured in its income statement. Part of this difference was represented by foreign production or exploitation taxes of $24 million and import duties of $98 million, both of which were charged to "purchases" and not reported as taxes in the company's conventional income statement.

CHART A

Typical Oil Company
INCOME STATEMENT
for the year ended December 31, 1957

	Millions
REVENUE	
Operating revenue	$783
Dividends, interest, and other revenue	15
	798
DEDUCTIONS	
Operating charges	
Purchases of crude oil and products	396
Operating, selling, and administrative expenses	218
Taxes, other than income taxes	15
Depreciation, depletion, and retirements	45
Interest on long-term debt	3
Provision for income taxes	40
	717
NET INCOME	$ 81

CHART B

TAXES AND OTHER PAYMENTS TO GOVERNMENTS

	Millions
Income taxes	$ 40
Operating taxes	15
Total per Income Statement	55
Production payments applied against foreign income tax liabilities	24
Import duties	98
Consumer and excise taxes	53
Total taxes and other payments to governments	$230

The last item was made up of consumer and excise taxes which the oil industry has historically recorded as a reduction of sales revenue and has not featured as a tax payment in the conventional income statement. Actually, then, the $55 million reported was less than one fourth of the total tax and similar payments to governments made by this typical company in 1957. Small wonder that some of us believe the conventional form of income statement may be somewhat inadequate and deficient.

Furthermore, featuring income taxes as the last deduction from income, which has been the historical pattern, seems to invite especial attention to this one type of tax—and strengthen the idea that the income tax is government's principal means of sharing in corporate profits. Yet, from this particular income statement, we may notice that the income tax provision of $40

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million was equal to not much more than one sixth of the company's total payments to governments.

Several of the companies in the oil industry have already adopted a new form of income statement which serves to do a more effective job in pointing up that theirs is, in truth, a most heavily taxed industry. At least eight oil companies (Continental, Gulf, Humble, Jersey, Shell, SoCal, Sohio, and Union) made some rather significant changes in their income statements for 1958.

To illustrate the type of changes made, we might take a look at Standard of California's income statement for 1958 *(Chart C)*. This year SoCal combined all taxes—income, property, and other operating taxes—in one total. Details of this tax total were reported in the notes to financial statements.

CHART C

Standard Oil Company of California
CONSOLIDATED STATEMENT OF INCOME

	1958 Millions
GROSS INCOME	
Sales and other operating revenues	$1,559.1
Dividends from affiliated and other companies	125.0
Other income	4.4
	1,688.5
EXPENSES	
Operating expenses	622.6
Purchased crude oil, petroleum products, and other merchandise	559.7
Depreciation, depletion, and amortization	145.9
Taxes—income, property, and other	98.4
Interest and debt expense	4.1
	1,430.7
NET INCOME	$ 257.8

Union of California adopted similar changes in its 1958 income statement *(Chart D)*, describing their combined taxes as "Taxes on properties, operations, and earnings." We may notice, too, that neither SoCal nor Union featured these taxes as the last deduction.

CHART D

Union Oil Company of California
CONSOLIDATED EARNINGS

	1958 Millions
REVENUES	
Sales and operating revenues	$408.0
Other income	4.6
Total Revenues	412.6
DEDUCTIONS	
Raw materials, products, other materials, and services purchased	242.8
Taxes on properties, operations, and earnings	16.7
Salaries, wages, and employe benefits	60.9
Depletion, depreciation, and amortization	44.0
Dry hole and lands relinquished losses	16.6
Interest expense	6.0
Earnings applicable to minority interests	0.6
Total Deductions	387.6
NET EARNINGS	$ 25.0

Jersey Standard perhaps went a bit further in the face-lifting process. Its 1958 income statement *(Chart E)* goes a long way, we believe, toward pointing up the four important participants, or beneficiaries, in the distribution of corporate gross revenues:

Suppliers . . . Purchases of crude, products, and services
Employes . . . Payrolls and benefits
Governments . Taxes and other payments
Stockholders . Net income

CHART E

Standard Oil Company (New Jersey)
CONSOLIDATED STATEMENT OF INCOME

		1958 Millions
REVENUES		
Sales and other operating revenue	$8,092.1	
Less consumer taxes	548.6	$7,543.5
Dividends, interest, and other revenue		168.7
		7,712.2
COSTS AND OTHER DEDUCTIONS		
Crude oil, products, materials, and services		3,845.3
Taxes and other payments to governments		1,806.6
Wages, salaries, and employe benefits		915.9
Depreciation, depletion, and retirements		487.5
Interest and other financial charges		47.3
Income applicable to minority interests		47.1
		7,149.7
NET INCOME		$ 562.5

An additional feature of this format is that it provides for reporting excise and sales taxes.

Gulf and Sohio also used income statements in which excise and sales taxes were included in gross revenues and then immediately deducted as a separate featured item. In featuring the so-called consumer taxes, this form probably provides for a more complete reporting of taxes than, say, the SoCal and Union income statements. Yet many of us feel that it does not go far enough and, to do a more complete job of reporting, these excise taxes should be included in the total taxes and other payments to governments to be reported under Deductions.

The remainder of this article, to a large extent, will be dealing with this question of excise and sales taxes. Before jumping ahead to that subject, however, we might first take a quick glance at the supplementary comment and table on taxes that Jersey included in its 1958 report.

Chart F shows that in 1958, through one form of tax levy or another, Jersey made payments to various levels of government, United States and foreign, totaling over $2,355,000,000. This is not an exaggeration; it is an audited total. Yet, had we used the conventional old-fashioned form of income statement, we would have reported taxes of only $581,300,000, less than one fourth of Jersey's actual payments to governments.

CHART F

United States and foreign governments, through various tax levies, benefited from operations of Jersey and its affiliates to the extent of $2,355,200,000 in 1958 compared with $2,300,400,000 in 1957, as summarized below:

	1958 Millions
Income taxes	$ 400.0
Production, property, franchise, and other operating taxes	405.7
Import duties	1,000.9
	1,806.6
Consumer taxes collected for governments	548.6
Total payments to governments	$2,355.2

Payments to governments in 1958 were equivalent to $11.40 per share. This was more than five times the dividend payments to shareholders and more than double the employe payroll and benefit costs.

The subtotal on this supplementary table was included to tie in with the tax figure appearing under Costs and Other Deductions in the income statement. The consumer tax item is the figure shown as a separate deduction under Revenues. Many of

us are hopeful that in the not too distant future it will be common practice to combine all tax payments, including the excise and sales taxes, as a single deduction on the formal income statement.

And that brings us to perhaps the more important part of this paper, the reporting of manufacturers' and consumers' excise taxes. Certainly it is the most controversial. We might begin by taking a look at some of the historical aspects of this form of tax.

HISTORICAL ASPECTS OF THE EXCISE TAX

The excise tax has been a most important source of revenue to governments, both federal and state, for a great many years. In the year 1958, revenues provided from this one form of levy reached the staggering total of over $15 billion.

Today the excise tax is employed by every state in the Union and, in many cases, is actually the highest revenue producer. As *Chart G* shows, these state excise taxes have increased considerably over the years. The 1958 total of $4 billion in excise taxes accounted for about 25 per cent of the total state tax revenues from all sources. The tax on motor fuels alone provided the states with revenues of $2,955,000,000, or about 70 per cent of the total of all excise tax receipts to states in the year 1958.

CHART G

TOTAL STATE TAX REVENUES BY TYPE OF TAX

Millions

	1919	1929	1939	1949	1958
General sales and gross receipts	—	—	$ 440	$1,505	$ 3,538
Excise taxes—					
Motor fuels	$ 1	$ 432	822	1,475	2,955
Alcoholic beverages	—	—	208	425	647
Tobacco	—	—	60	388	616
Motor vehicles and licenses	65	348	364	663	1,411
Property tax	237	350	259	280	533
Income taxes	50	204	331	1,236	2,561
Unemployment tax	—	—	799	973	1,488
All other	241	617	601	1,397	2,644
TOTAL	$594	$1,951	$3,884	$8,342	$16,393

Source: Statistical Abstract. U. S. Department of Commerce.
1958 Facts and Figures (Preliminary). Tax Foundation, Inc.

CHART H

FEDERAL EXCISE TAX COLLECTIONS

Millions

	1932	1939	1949	1958
Motor fuels and lube oil	$ 62.8	$ 237.5	$ 585.4	$ 1,706.0
Automobiles and accessories	N.A.	56.7	589.8	1,543.0
Tires and inner tubes	N.A.	34.8	150.9	260.0
Alcoholic beverages	8.7	587.8	2,211.0	2,946.0
Tobacco	398.6	580.2	1,322.0	1,734.0
All other	229.0	271.1	445.9	2,625.0
Total federal excise tax receipts	$ 699.1	$1,768.1	$ 5,305.0	$10,814.0
Total federal tax revenues (all sources)	2,006.0	5,668.0	42,774.0	79,978.0

Sources: Petroleum Facts and Figures.
API Economics Bulletin, December 1958.
Statistical Abstract. U. S. Department of Commerce.
IRS News Release. IR-248.

All internal revenue collections by the United States Federal Government totaled just short of $80 billion for the fiscal year ended June 30, 1958. It is interesting to note from *Chart H* that, of these total federal tax revenues, approximately 13.5 per cent or $10,814,000,000 was represented by excise tax collections. Of this total $2,946,000,000 (27 per cent) was accounted for by the tax on alcoholic beverages, $1,734,000,000 (16 per cent) on tobaccos, $1,706,000,000 (16 per cent) on motor fuels and lube oils, and $1,543,000,000 (14 per cent) on automobiles and accessories.

A little later on we shall note that the tobacco and liquor industries have not been nearly so backward as others in reporting these excise taxes in their formal income statements.

ECONOMIC ASPECTS

Though the patterns of modern business are complex, fundamental economic laws still operate. In selecting an avenue for investment, the businessman expects recovery of all costs, together with a rate of return appropriate to the risk he takes. Every contingency must be considered—inflation, technological improvement, labor costs, material costs, research and development costs, and all taxes.

Every business enterprise, regardless of its legal form, is called upon to pay taxes. Every modern entrepreneur, whether his enterprise operates profitably or not, is exposed to taxation in one form or another. The measures of tax liability and their forms are varied and complex—franchise tax, sales tax, property tax, license tax, gross receipts tax, severance tax, admission tax, excise tax, income tax, stamp tax, and many other levies devised by legislative minds to support government programs. Enumeration of these taxes is not by way of complaint but rather a simple statement of fact.

The layman's concept that business corporations, partnerships, or sole proprietors somehow, from thin air, generate money to pay taxes is as erroneous as it is widespread. Some taxes are paid by individuals directly to governments, while others are concealed in the prices paid for services and commodities consumed by individuals. The tax dollar collected from the customer to cover taxes of all kinds is just as real and tangible as the dollar collected to meet payroll, raw material costs, or other expenses.

Federal and state legislators have learned that excise taxes generally are easy to levy, simple to administer, inexpensive to collect, and almost delightful to increase. As a source of revenue that provokes relatively little political resistance, the tax on gasoline, for example, has thus far proved a vein of solid gold for replenishing depleted governmental treasuries.

Tax questions are resolved in the political arena and, too often, determined by political expediency. The equality or fairness of the tax burden should be measured against the government service required, and taxpayers individually or as a group must prove convincingly that they are doing their part. Lack of disclosure of the full economic impact of taxes on a business is the prelude to further tax penetration of such business.

Not only is a report system that omits any part of the total amount received or spent misleading; it also conceals a portion of the financial trust involved. Since excise taxes are an integral part of the price charged for the unit of commodity delivered and the total cash received is the amount that must be accounted for, such taxes should be included in reports of revenue and expense. The company is responsible for making all tax payments. Failure to do so creates just as real a liability as does delay or failure in payment of wages, materials, or construction bills.

Whether government extracts its tax revenue from an industry in the form of excise taxes on its products, levies a tax that increases the cost of raw material, or eliminates necessary allowances makes little difference—it's money, any way you count it. Every taxpayer, when a tax increase is proposed, examines the measure and computes its cost to him. The next question he asks, if he is a businessman, is whether or not the tax burden can be shifted in the form of higher prices. If not, his choice is to either fold up and quit or continue at a reduced margin per unit.

Excise taxes, like the cost of living, are an integral part of price. This fact is recognized by the Department of Commerce, which classifies excise taxes as indirect business taxes. The Bureau of Labor Statistics also includes excise taxes in the commodity prices which are recorded to compute the consumer price index.

LEGAL ASPECTS

Needless to say, perhaps, it is not unlawful to include federal and state excise taxes on specific products in gross revenues in the income statement of a company's annual report. This positive statement is made with the understanding that the income statement would clearly indicate that the amount reported for revenues included such tax collections, and also that a like amount would be included in the income statement as an expense.

With respect to petroleum products, for example, the Internal Revenue Code provides for a federal tax ". . . on gasoline sold by the producer or importer thereof, or by any producer of gasoline. . . ." Somewhat similar language, except for the substitution of "manufacturer" for "importer," is contained in the section of the code covering lubricating and cutting oils. This language would certainly seem to support the view that the primary liability for the federal tax is on the producer, manufacturer, or importer making the sale of these petroleum products. Many court decisions have upheld this tax as on the producer. Nevertheless, there has not been complete uniformity of legal opinion on this federal tax.

This is equally true with respect to the various state taxes on petroleum products. While some states levy the tax on the manufacturer, many place the levy on the distributor. In any event, even though the statutes in some states may specifically provide that the tax may be passed on to the consumer, the distributor, dealer, or other seller has the primary liability to remit the prescribed amount of the tax whether collected or not.

Notwithstanding the uncertainties stemming from an examination of the principal statutory authorities covering the federal and state excise taxes, there appears to be no legal obstacle to reporting these taxes as part of revenues and expenses in the income statement of an oil company's annual report.

VIEWS OF INDEPENDENT ACCOUNTANTS

The form of income statement that features deductions by nature of expenses—such as purchases of goods and services, wages, salaries, and employe benefit costs, taxes and other payments to government—is acceptable to accountants provided that each classification of revenue and expense is properly described.

The independent public accountants recognize that the accounting treament being accorded excise and consumer taxes is not consistent among all industries. It has been the generally accepted practice in certain industries, such as the liquor and tobacco industries, to include excise and consumer taxes in gross revenues with a corresponding amount included under costs and deductions. Moreover, this accounting treatment and form of reporting was recently adopted by several companies in the petroleum industry.

The independent public accountants will not take exception to the practice of featuring as a separate item in companies' income statements the total taxes paid to governments so long as adequate disclosure is made. If companies revise their classifications in the income account for excise taxes, it is recommended that they restate the preceding year's figures for comparative purposes and indicate that the change had no effect on net income in those cases where such taxes were treated as expense. Inasmuch as changes such as these would be considered merely reclassifications within the income account, no reference would have to be made to them in the accountants' reports on the financial statements of those companies. However, such income statement presentation should be supported by a supplementary summary relating to total tax and other payments to governments with appropriate descriptions of the principal classifications of taxes. Income taxes paid to governments should, of course, appear separately in the summary, but it is not necessary to segregate them between United States and foreign.

The general acceptability of including excise taxes in gross revenues, and combining all taxes in one amount under costs and expenses in the income statement, would be further strengthened, the independent accountants believe, if more companies in the United States were to adopt this form of presentation in 1959.

CONTINENTAL AND HUMBLE 1958 REPORTS

Continental and Humble are two companies that I believe deserve an Oscar for their forward thinking and for the courage of their convictions. These two companies adopted an income statement format in 1958 which did an outstanding job in making a full disclosure of their total tax payments to governments.

First, in the 1958 income statement of Continental *(Chart I)*,

CHART I

Continental Oil Company
STATEMENT OF CONSOLIDATED INCOME
for the year ended December 31, 1958

	Millions
RECEIPTS	
Sales and services (including excise taxes—Note 7)	$665.9
Dividends, interest, and other income	5.5
	671.4
COSTS, EXPENSES, AND TAXES	
Crude oil, products, materials, and services	379.7
Federal, state, and other taxes (Note 7)	92.4
Salaries, wages, and employe benefits	69.7
Intangible development costs	33.9
Depreciation and retirements	28.2
Surrendered leases	8.3
Depletion	2.8
Interest and debt expense	5.0
Provision for loss on foreign investments	4.0
	624.0
NET INCOME	$ 47.4

we might note that, under Receipts, sales and services are shown as including excise taxes with an appropriate cross reference to Note 7 *(Chart J)*. Under Costs, Expenses, and Taxes we find

CHART J

Continental Oil Company

Note 7: Federal, state, and other taxes include the following:

	Millions 1958	1957
Federal and state gasoline and oil excise taxes (recovery thereof included in receipts from sales and services)	$69.4	$68.8
Income taxes		
Federal	7.2	4.6
State	0.2	0.1
	7.4	4.7
Operating taxes		
Ad valorem taxes	6.8	6.3
Production taxes	6.4	6.2
Unemployment and old age benefit taxes	1.0	1.1
Other taxes	1.3	1.3
	15.5	14.9
	$92.3	$88.4

Certain reclassifications (which did not affect net income) have been made in the 1957 figures as appearing in that year's report to make them comparable with the classifications used in 1958.

an item featuring all federal, state, and other taxes, also cross-referred to Note 7. Incidentally, we might note that the $92,400,000 of total tax payments was equal to almost 200 per cent of Continental's net profit for the year.

(Continued on page 532)

Numbering Numbers

X. Bender Tansill

A layman's guide to understanding the numbering system used in computers

THIS BUSINESS OF NUMBERS has been closely associated with the work of the accountant and the auditor since time immemorial, but the age of automation has given the old task a new twist. Accountants have been accustomed to the numbers used in the decimal system. With the advent of automatic or electronic data-processing systems, one comes face to face with a different application of numbering—the use of the binary numbering system.

Fortunately, the accountant will not directly face this problem of conversion of one numbering system to another because the automatic data-processing systems' equipment or "hardware" does this automatically for him. However, since by nature the accountant and the auditor are inquisitive and curious people, an explanation of numbering systems is deemed appropriate.

Numbering systems are simply and plainly conventions or arrangements, orderly and uniform in essence, which use "marks" of one description or another, to make quantitative measurements or records. The decimal system is the most familiar method to most everyone. It uses the ten marks (or Arabic numerals) 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9.

While the decimal system is rather universally adopted (even the Russians and the Japanese use it as well as most of the other peoples of the world) there have been other numbering systems used in the past. Probably the most familiar to most of us is the Roman numeral system which used the seven marks (letters) I, V, X, L, C, D and M. Furthermore, the Mayans, in the days before the discovery of America, used a five-mark system (which we term a quinary numbering system).

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A listing of some of the more important numbering systems is:

System	*Marks in Common Usage*	*Radix*
Decimal	0, 1, 2, 3, 4, 5, 6, 7, 8, 9.	10
Binary	0, 1.	2
Trinary	0, 1, 2.	3
Quinary	0, 1, 2, 3, 4.	5
Octal or Octonary	0, 1, 2, 3, 4, 5, 6, 7.	8
Duodecimal	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, x, y.	12

You will recognize these terms from their Latin stem derivations as tens, twos, threes, fives, eights and twelves. The duodecimal system has partially crept into English usage and may be associated with linear measure, twelve inches to the foot; troy weight, twelve ounces to the pound; money values, twelve pence to the shilling; etc.

For purposes of computing and data processing, the decimal system is one of the most difficult to use; in fact, it is actually a rather poor numbering system. You cannot get as many whole number fractions in it, for instance, as you can in the duodecimal system. In the former you can get only three such subdivisions, i.e., 1/2 of 10 equals 5, 1/5 of 10 equals 2, and 1/10 of 10 equals 1; whereas in the latter you can get five—1/2 of 12 equals 6, 1/3 of 12 equals 4, 1/4 of 12 equals 3, 1/6 of 12 equals 2 and 1/12 of 12 equals 1. Since the decimal system is difficult to work with, most computers operate in a simple numbering system, the one known as the binary code.

THE ORIGIN OF A NUMBERING SYSTEM

What makes a numbering system?

The selection of the marks used to indicate numbers follows no set plan. The purpose for four (4) following three (3) in our decimal system was born of chance. We adopted the Arabic system of numbering and thereby accepted it without any further reasoning. However, when we advance in our Arabic numbers from nine (9) to ten (10), we do encounter a basic reasoning process which is founded on the two following steps:

Step 1. Advance the mark or number on the extreme right, the 9 referred to above, back to the first number in the system, a zero or cipher (0) in this case.

Step 2. Next, shift one column to the left and advance whatever mark was in this column to the next higher mark in the system. In this instance, an implied 0 is advanced to the next higher mark in the system, which is the 1 in this situation.

We now have a method for progressing from one number to the next higher number in a numbering system. To repeat:

Rule 1. Advance the number on the extreme right to the next number in the system, as from 3 to 4, noted above.

Rule 2. If the number on the extreme right is the last mark or number allowed in the system, change it in that column to the first number in the system. Then move one column to the left and advance the mark or number found here to the next higher mark in the system.

Rule 3. If this next column to the left also contains the last mark or number in the system (i.e., 199, 299, 899, etc.), follow *Rule 2* above until you reach a column to the left where you can change the number in that column to the next higher mark or number in the system.

This is the plan and procedure as well as the base or standard for a numbers system, regardless of the numbering marks or numerals used or of how many marks there are in the system.

Now let us apply this knowledge. To advance from, say 234, to the next higher number, 235, we use *Rule 1* and determine that the number to the extreme right in this group of figures is a 4, which is then raised to a 5, thus producing the number 235.

Next, consider the figure 239. Here we apply *Rule 2* inasmuch as the number at the extreme right is a 9 and this is the uppermost limit of numbers or marks used in the decimal system. Therefore, applying *Rule 2,* we change the 9 to the first number or mark in the system, a zero (0). We then move one column to the left and change the 3 in the original figure of 239 to a 4, thus arriving at the figure 240.

Finally, *Rule 3* may be called upon when we use numbers ending in two or more 9's, such as in the case of 299, 3999, 79999, etc. In the case of 299, for instance, we arrive at the next higher number, by the use of *Rule 3.* The 9 at the extreme right is changed to a zero (0); then a shift is made one column to the left. We find that this column also has a 9 so we change this number to a zero (0) and again shift to the next column to the left. This third column contains a 2 which we now change to a 3 and arrive at the number 300. This same procedure can be followed for 3999, 79999, etc. By observing these three rules, we have a plan or method for finding, in a given numbering system, the logical succession or sequence of numbers or marks.

These rules, we will presently perceive, apply with equal force to other numbering systems such as in the straight binary code; the one used in most digital computers and digital control systems.

THE BINARY NUMBERING SYSTEM

There are only two marks used in the binary numbering system. Generally, the Arabic numerals 0 and 1 are used to represent these numbers, although letters or special symbols would serve the same purpose. The following table compares decimal numbers 0 through 15 with binary-number equivalents:

Decimal	*Pure Binary*	*Decimal*	*Pure Binary*	*Decimal*	*Pure Binary*
0	0	6	110	11	1011
1	1	7	111	12	1100
2	10	8	1000	13	1101
3	11	9	1001	14	1110
4	100	10	1010	15	1111
5	101				

From the above, we note that in binary, 10 follows binary 1, binary 100 follows binary 11, binary 1000 follows binary 111, and so forth. We also realize that 1 equals 1 in both systems. Applying the criteria set forth above, we see that in binary we advance from 10 to 11 as well as from 110 to 111 and from 1110 to 1111, by use of *Rule 1.* We also recognize that in binary we advance from 1 to 10, from 11 to 100, from 111 to 1000, etc., by using *Rule 2.*

It is to be remembered that in binary all numbers have but two given marks. Numbers appear as 1101, 110011, 1111111, etc., but only zeros and ones are listed. If any other mark or number, such as a 2 or 3 or 7, is present with the 0 and 1, it is not the binary system. Of course, we could use the letters x and y or the Greek letters for alpha and beta, but engineers and mathematicians generally prefer to use the Arabic numerals 0 and 1.

BACK TO THE ABACUS*

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**From the January 1953 issue of* THE CONTROLLER, *page 4.*

CONVERSION OF BINARY TO DECIMAL AND VICE VERSA

If we were adept in the use of binary numbers, we would know binary numerals for what they are, but this is not the case with most of us. We have been taught to think in and use decimal numbers; therefore, we must learn how to convert these systems back and forth. In order to facilitate these maneuvers or interchangeability of the two systems, decimal and binary, let us examine what conventional decimal numbers actually represent.

In the decimal system, we think in tens. The number 58 means:

10 plus 10 plus 10 plus 10 plus 10 plus 8.

This may be written as:

5(10) plus 8(1) equals 58 or as
$5(10^1)$ plus $8(10^0)$ equals 58.

The number 4321 similarly means:

4000 plus 300 plus 20 plus 1, or
$4(10^3)$ plus $3(10^2)$ plus $2(10^1)$ plus $1(10^0)$ or
4(1000) plus 3(100) plus 2(10) plus 1(1).

It is to be recognized that the number 10 appears to the various powers. Accordingly, it is deduced then that all numbers are obtained by using the total number of marks in the system (called the radix) raised to the various powers.

To illustrate this let us convert a binary number to a decimal number; say binary number 10110111. As there are only two marks used in binary, the radix is the number 2.

$10110111 = 1(2^7)+0(2^6)+1(2^5)+1(2^4)+0(2^3)+1(2^2)+1(2^1)+1(2^0)$, or
$1(128)+0(64)+1(32)+1(16)+0(8)+1(4)+1(2)+1(1)$ or
$128+0+32+16+0+4+2+1$ equals 183.

A table of powers of common number systems follows:

Binary		*Octal*		*Decimal*	
2^0 equals	1	8^0 equals	1	10^0 equals	1
2^1 equals	2	8^1 equals	8	10^1 equals	10
2^2 equals	4	8^2 equals	64	10^2 equals	100
2^3 equals	8	8^3 equals	512	10^3 equals	1,000
2^4 equals	16	8^4 equals	4,096	10^4 equals	10,000
2^5 equals	32	8^5 equals	32,768	10^5 equals	100,000
2^6 equals	64	8^6 equals	262,144	10^6 equals	1,000,000
2^7 equals	128	8^7 equals	2,097,152	10^7 equals	10,000,000
2^8 equals	256	8^8 equals	16,777,216	10^8 equals	100,000,000

The binary numbering system is most suited for the application of arithmetic. For this reason, it is used in electronic computers. Addition, multiplication, subtraction and division are all simply calculated in binary. This fact is set forth in detail in the following paragraphs. *(Continued on page 512)*

ADDITION

To form an addition in the decimal system, we must commit to memory the addition tables; that is, we remember that 8 plus 5 are 13; that 7 plus 9 are 16, etc. In binary only two simple rules need remembering, thus:

Rule 1. 0 plus 1 is 1; and
Rule 2. 1 plus 1 is 0 and carry a 1 to the next column to the left.

We can work any problem in addition in binary by applying these two rules. Accordingly, should we wish to add in binary 10 (2 in decimal) to 11 (3 in decimal) we would get this result:

Binary		*Decimal*
10		2
11		3
—		—
1		
0	— Carry 1 left (index)	
1	— the number carried	
10 1	Result	5

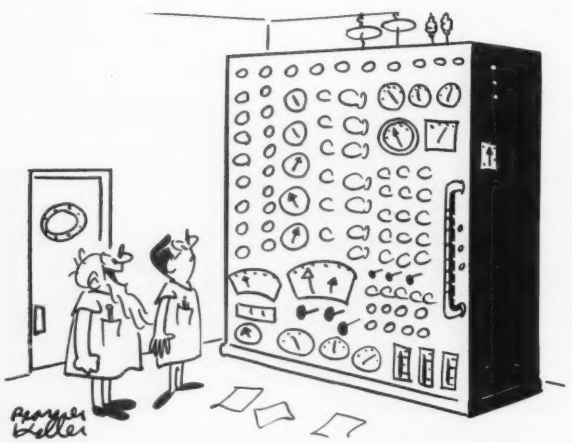
101 (binary) equals $1(2^2) + 0(2^1) + 1(2^0)$ in decimal
$4 + 0 + 1$ equals 5.

Let us now add two more numbers, for instance, decimal 11 (binary 1011) to decimal 15 (binary 1111), thus:

Binary		*Decimal*
1111		15
1011		11
—		—
0	carry 1	
1	carry 1	
0	carry 1	
1	carry 1	
1	the carry	
11010		26

We can now convert 11010 in binary to decimal in the following manner and prove our calculation.

$1(2^4) + 1(2^3) + 0(2^2) + 1(2^1) + 0(2^0)$ equals $16 + 8 + 0 + 2 + 0$ or 26.



"Around here we refer to it as 'Old Fat Head'"

MULTIPLICATION

As in the case of addition, multiplication in binary is extremely simple. There is no need to commit to memory involved multiplication tables. It is in essence a process of addition and moving progressively to the left or indexing as it is referred to technically. To illustrate let us multiply binary numbers 111 by 101 (7×5 in decimal or 35). We do this by employing these two rules:

Rule 1. 1×0 is 0; and
Rule 2. 1×1 is 1.

Using these two rules and preserving the conventional method of indexing or shifting to the left, we arrive at this calculation and answer:

Binary	*Decimal*
111	7
101	5
—	—
111	
000	
111	
100011	35

Converting binary number 100011 to its decimal equivalent we get:

$1(2^5) + 0(2^4) + 0(2^3) + 0(2^2) + 1(2^1) + 1(2^0)$ equals
$32 + 0 + 0 + 0 + 2 + 1$ equals 35

SUBTRACTION

Subtraction in binary code is more involved than addition in binary. It requires the use of a technique known as complementing. Complementing means adding that which completes a number. As the complement of a given number, say 23, is obtained by subtracting it from some reference number such as 100, we find by deduction that the complement is 77. Now if we had desired to subtract 23 from, say, 37, we can accomplish this "subtraction by addition" by adding 37 to the complement of 23 or 77 (37 + 77) and arrive at 114. Next we cancel the reference number (100) by discarding the first 1 in the figure 114 and we arrive at the answer 14 by addition. Hence, we find that subtraction can be accomplished or worked by the addition of the complement of a given number, if the reference number is cancelled or discarded. Remember that the reference number appears in the n + 1 column where a number with n digits is being complemented.

HOW TO COMPLEMENT A BINARY NUMBER

A binary number is complemented as follows: Change each 0 to 1 and each 1 to a 0 and then add a 1 in the furthest column to the right. For instance, the complement of 111 in binary is obtained by changing this number to 000 and then adding a 1 to the right hand column to get 001. Another example is this—the complement of 101010 is 010110, arrived at thus:

101010	Change the 1's to 0's and the 0's to 1's as follows:
010101	add 1
1	
010110	and the result is the complement of 101010.

The binary complement is employed to subtract by addition in the following manner:

	Binary	*Decimal*
	10101	21
Subtract	01010	10
	—	—
		11

(Continued on page 514)

Another way RCA serves business through electronics
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Vice President and Controller
NIAGARA MOHAWK
POWER CORPORATION
Mr. George J. Brett, photo left, discusses the RCA 501 with Mr. Harold E. Steiner, Assistant Controller, photo right.

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The number to be subtracted—01010, is complemented to obtain 10110 as the complement and this figure is then added to 10101 as follows:

```
                10101
Add             10110
               -------
              1 01011
```

The overflow figure, the 1 in the leftmost column, is discarded or cancelled leaving 1011 which is the figure eleven (11) in decimal.

DIVISION

Computations in division, in binary, are worked in much the same manner as in decimal division but are notably more simple. The test is to see whether the divisor will go into the dividend or not. If the former condition prevails, a 1 is carried into the quotient, if not a 0 is placed there. The point to remember is that division is the reverse of multiplication. To illustrate, let us multiply 6 by 7 in decimal to get 42. In binary the same calculation would be 110 by 111 equals 101010, and is arrived at in this manner:

```
Multiply        110
By              111
               ----
                110
               110
              110
              ----
              12210   (Note that these are implied 2's.)

Carry 1, cancel 2   1✗
Carry 1, cancel 2   1✗
Carry 1, cancel 2  1✗
                   ------
                   101010
```

In the above, we actually cancel two 1's and carry to the next column to the left the carry of 1.

Now let us proceed with division. If we wish to divide say 42 in decimal by 7, we arrive at the figure 6. In binary, it would be 101010 divided by 111 equals 110. To illustrate this division in binary, we proceed as follows:

Note that the divisor 111 is greater than the first three digits of the dividend—101. Therefore, we place a zero in the quotient and carry 111 into the first four digits of the dividend which are 1010, in this manner:

```
                                  0110
                              ---------
                              111)101010
                                 x  x
                                 1
Cancel 1, carry back 2          ✗
                                1
                                 1
Cancel 1, carry back 2          ✗
                                  1
                                   1
Cancel 1, carry back 2            ✗
                                    1
Place a 1 in the quotient and deduct the divisor from this
  much of dividend              111
                              ---------
Deduct and carry down next figure in dividend  --111
Place a 1 in the quotient and deduct divisor from this
  balance                       111
                              ---------
Deduct and carry down next figure in dividend  ---0
Divisor will not go into remainder so place a zero in quo-
tient.
```

Next let us reverse the process. This time we will divide 101010 by 110 to get 111. It is to be noted that 110 will not go into 101 so we place a zero in the quotient and carry 110 into 1010 as follows:

```
                                  0111
                              ---------
                              110)101010
                                 x  x
                                 1
Cancel 1, carry back 2          ✗
                                1
                                 110
Place a 1 in the quotient and deduct the divisor from this
  much of dividend and carry down figure  -1001
                                   1
Cancel 1, carry back 2             ✗
                                  1
                                   1
Cancel 1, carry back 2             ✗
                                    1
Place a 1 in the quotient and deduct the divisor from this
  balance                          110
                              ---------
Carry down next figure in dividend  ---110
Place a 1 in the quotient and deduct the divisor from this
  balance                          110
                              ---------
Deduct to complete                 ---
```

Finally, suppose we wished to divide 13 by 4 to get 3.25. Here we leave pure whole numbers and use a decimal point which is a misnomer in the language of binary numbers. It actually should be referred to as the "binary point." In binary, 1101 is the equivalent of 13 in decimal and 100 in binary represents 4 in decimal. The calculation in binary is made in this manner. Note that 100 goes into 110, the first three digits of the dividend; therefore, our first number in the quotient is 1.

```
                                  11.01
                              ---------
                              100)1101.00
                                 x  xx
Place a 1 in the quotient and deduct the divisor from this
  much of dividend              100
                              ---------
Carry down next figure from dividend  -101
Place a 1 in the quotient and deduct the divisor from this
  balance                       100
                              ---------
Carry down next two figures from dividend placing a (dec-
imal) point in the quotient as well as a 0  --1 00
Place a 1 in the quotient and deduct the divisor from this
  balance                         1 00
                              ---------
Deduct to complete.               - --
```

To prove our work, we convert the quotient into its decimal equivalent in the usual manner:

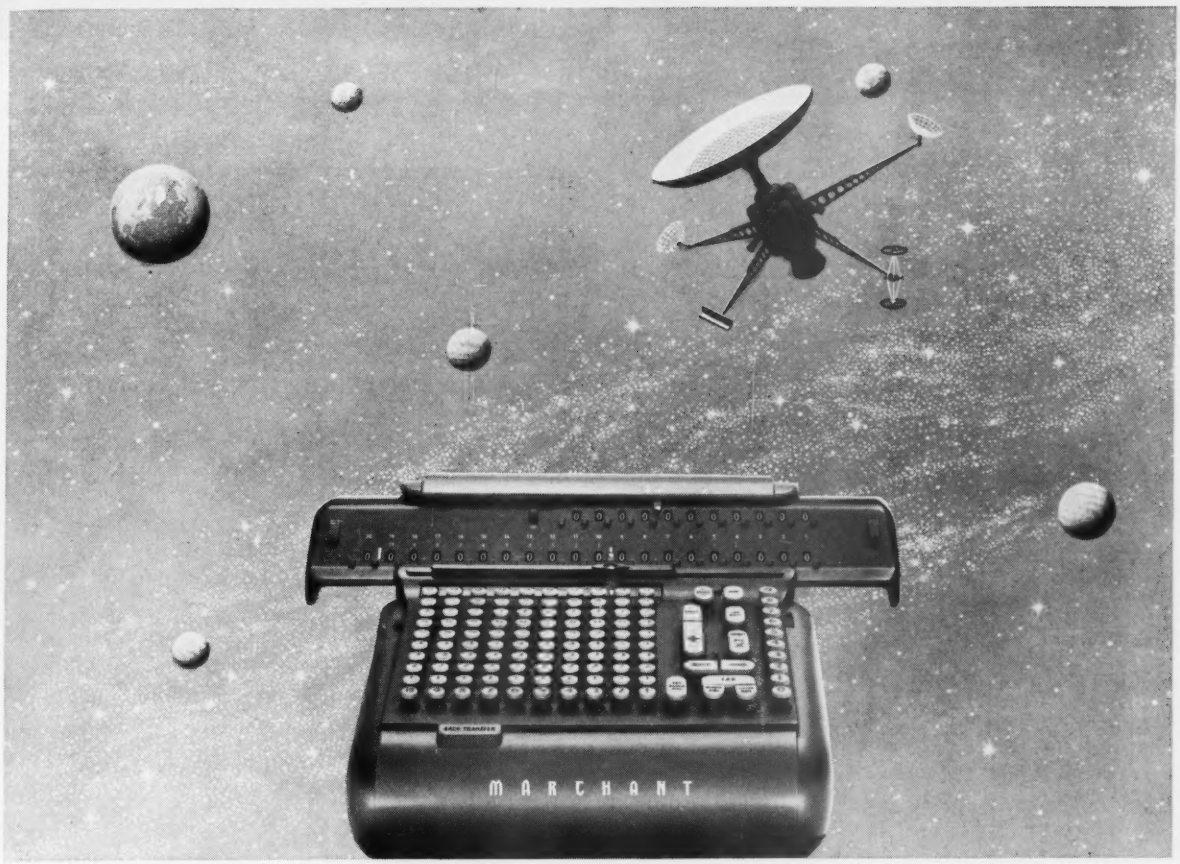
11.01 equals $1(2^1) + 1(2^0) + 0(2^{-1}) + 1(2^{-2})$ or $2 + 1 + 0 + \frac{1}{4}$ equals 3.25

It is to be remembered that our progression in binary in whole numbers is 0, 1, 2, 4, 8, 16, 32, 64, 128, 256, etc. Accordingly, when we interpose a binary point (decimal point in disguise), we progress in binary fractions as follows: 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, etc.

In conclusion, to complete our consideration of the different numbering systems, let us review a problem in multiplication carried out in the manner the Romans would have proceeded. Here we will multiply 123 (CXXIII) by 165 (CLXV) to arrive at 20,295 (? ? ? ?):

```
                                                    C X X I I I
                                                    C L X V
                                                D       LL      VVV
                                          M     CC      XXX
                                    MMMMM   DD      LLL
                          MMMMM MMMMM   MM      CCC
                          MMM MMMMM MMMMM MMMMM DDD CCCCC LLLLL XXX VVV
Cancel VV and convert to X                                      X
Cancel LLLL and convert to CC                       CC
Cancel CCCCC and convert to D                    D
Cancel DDDD and convert to MM
                    MM
                    MMMMM MMMMM MMMMM MMMMM   CC      L XXXX   V
or                        20,000            + 200 +   50 + 40 + 5
equals 20, 295.
```

This article was reprinted from The Armed Forces Comptroller, *June 1958.*



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Wanted: Good Cost-Control Executives

William A. Hertan

President, Executive Manpower Corp., New York

TO SAY OFFHAND that there is a shortage of good cost-control executives in American industry today is much like saying that there is a scarcity of top-flight businessmen in all fields.

There always is.

However, of all the shortages of much-in-demand, highly rated management men, those executives who are cognizant of the techniques of meshing money and management are most needed today.

One primary reason for this continuing pressure for cost specialists is the fact that our economy during the past decade and a half has been "defense-oriented." Production and more production was a very real key to our success in World War II and in the Korean War. The need for a strong retaliatory military force has continued through a series of crises in the Cold War.

In other words, American industry has the problems of production fairly well solved. There is no shortage of television sets, but there is a shortage of people who can sell them, and a shortage of executives who can equate the difference between production and marketing costs. The cost control expert often spells the difference between sound profit-planning and inadequate systems that will turn up a loss.

The biggest and most pressing need of executive recruitment firms during the past two years has been for the executive who knows how to handle corporate finance—a top man to take over as controller or vice president of finance.

In most instances, a request from an anxious employer will run something like this: "Get me a top man who can handle financial policy for us, and one who can ride herd over expenditures as well."

Many growth companies today, after a long flirtation with idea men who specialize in product research, marketing, design and advertising, have come to the sober conclusion that, much as these inspired and valuable executives are needed, the corporate organization has to maintain balance by placing on the management team a hardheaded, dollar-wise executive who knows how to raise his voice when the question of merger, expansion, product development and marketing campaign

costs are introduced.

A good long look at the merger trend that has been in vogue recently will show that a considerable number of companies that manufacture and market consumer products turned to mergers because they found themselves overproduced or undersold, or just plain out of balance. Costs of production and marketing did not make the product profitable.

For a considerable period, diversification was the trend for many companies, and yet diversification proved *not* the answer to many one-product companies. It just introduced a complexity of manufacturing and sales headaches.

So much for why top-drawer financial executives are needed as never before.

What should the employer do to find this rare businessman?

He has two choices. One method is to approach the problem through the combined efforts of his executive staff. If the company is willing to devote an accumulated total of *40 full work-weeks* of executive time to the job, it can be accomplished. Unless it is a question of promoting an executive inside the company, there's no short cut.

These 40 weeks, most of which are contributed by well-paid management men earning from $25,000 on up, are devoted to screening, corresponding, checking out references, interviewing and whatever socializing is necessary.

The second method is to make use of a management recruiter. There are a small number of such firms, most of which are highly efficient and thoroughly skilled in the "executive search."

A good management recruiter will save the company about 35 weeks of that full work-week load. The employer will still have to assign a top executive to work with the recruitment firm. And this executive must expect to devote about five full work-weeks of his time toward the search.

The management recruiter saves the company not only time, which can be evaluated in dollars and cents (a corporation's 40 work-week search can add up to $25,000 in time value), but also reduces to a minimum the considerable risk of hiring the wrong man. Management recruiters specialize in *evaluation* and *fact-finding*.

They will check the applicant's experience, present responsibilities, background and then, systematically, evaluate his talent, adaptability, personality, drive and ability to work with the present company management team.

To turn to the other side of the coin, *what should the financial executive do who wants to better his position, with another company?*

The controller who seeks greener pastures should take several sensible steps in order to create an opportunity.

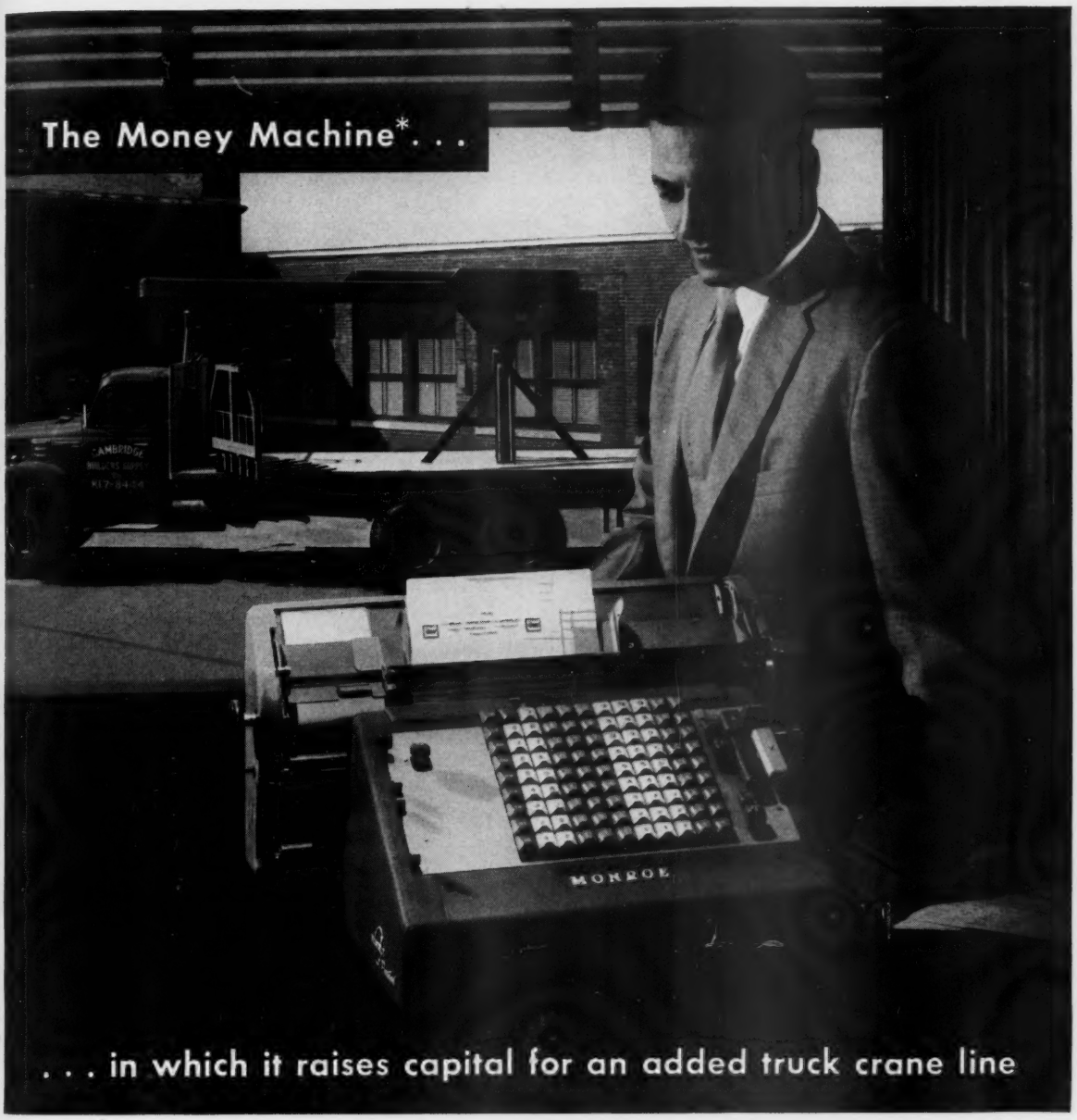
In most cases, he cannot apply at a management recruiter's office because management recruiters, for the most part, do not keep active files or waiting lists. The recruiter finds such files time-consuming, quickly outdated, and often unfair to the applicant, who believes that something is developing for him.

What the applicant can do, of course, is make himself known. A good resume is advisable. This should reflect his own thinking, and not read as though it were turned out by a machine. The resume is the first step towards selling yourself.

Next, the applicant should make calls on reputable employment agencies that specialize in financial positions. It is best to answer specific employment agency ads, and send your resume in beforehand. Then call for an appointment.

Do not answer blind want ads personally, simply because your own company or a competitor may be running the ad. Remember, too, that because your company places an advertisement for a position you would like to have, it does not always fol-

(Continued on page 539)



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Daily Report of Inventory Condition

While this article deals with a data-processing system in a 2500-loom company, it is important to note that companies much smaller than this are using profitably punched-card accounting and control procedures.

A high-style synthetic weaver, for instance, having less than 1000 looms and less than 500 employes, is utilizing punched-card equipment to handle record-keeping in the following areas: Payroll and all related work, production statistics and efficiencies, quality control, grey stock inventory (packed and open), raw yarn inventory, accounts receivable, accounts payable, order status, production control, loom scheduling, and in-process inventory.

This work is being performed on a basic set of punched-card equipment and there are still time and capacity available for additional applications. This firm is planning to install spare parts and supplies inventory control, warp status control, and further production control work.

Small yarn and thread companies are also using profitably punched-card procedures to aid management in better and more factual mill operations.

While large companies may find punched-card accounting profitable on one or two applications because of the large volumes, the smaller companies normally must mechanize several applications, such as the inventory control system described here, to prove it economical.*

WHEN THE NEED arises to cut costs and streamline operating methods, management areas involving administration and paper work are not often considered to be a cost center of substantial importance for potential reduction. Attention is more frequently directed toward the modernization of production facilities and subsequent savings which can be realized through an over-all improvement of the manufacturing function.

Actually, both administration and manufacturing should be considered together for the maximum in savings and benefits. Efforts towards streamlining and cost-cutting should be expended on every function which affects the profit picture, whether it exerts a direct or indirect influence. In recent years, however, due to steadily increasing clerical costs and the complexity of the administrative function, there has been a definite trend toward keeping an ever-firmer and steadier control over administrative costs.

In reviewing its record of recent accomplishments, which included a rise in profits and stockholders' equity, increased sales in the face of a sagging textile market, and the retirement of all short-term bank loans, the management of Fulton Bag & Cotton Mills can point to many an innovation which contributed to a generally favorable picture.

Partial credit must be given to a concerted program of tightening up, streamlining, and revision of existing systems and procedures. Assistance and counsel in the formulation and implementation of this program were placed in the hands of Werner Textile Consultants, and more specifically, its systems and procedure staff, which realized immediate, effective reductions in administrative costs and personnel.

MILL NEEDED BETTER INVENTORY CONTROL SYSTEM

One of the major areas in need of over-all improvement was in Fulton's inventory control. The manual system in use at the time was found to be inadequate, expensive, and unwieldly. In order to improve customer relations, management set as its objective a system to obtain information on inventory quantities, availability, and delivery more accurately and promptly.

In the face of a declining textile market and because of increasing competition it became imperative to streamline systems and procedures, and set up efficient controls so as to serve Fulton's customers more efficiently and reliably.

The findings of the consulting firm disclosed that a great deal of information necessary for inventory control was being produced mechanically in the form of production, quality control, and sales reports. With this information available, goals were immediately set up to provide Fulton with a new automatic and mechanical inventory control system, for which 75% of the cost in maintaining such system was already being incurred in supplying the aforementioned data.

WHAT NEW SYSTEM SHOULD PROVIDE

The objectives of the new inventory control system were:

1. The inventory should be run daily, in order to accomplish its true purpose of supplying accurate, current information and control.
2. Proper control paths should be set up to make it as accurate as possible.
3. It should lend itself to future billing via punched cards.
4. It should supply sales management, sales/production control and warehousing with the information needed for each operation with a minimum amount of additional effort and paperwork.
5. A continuous check on the age of piece goods in inventory was required in order to avoid the expenses incurred when goods were handled on a last-in-first-out basis.
6. Information obtainable from a proper inventory control system must be adaptable to simple summarization so that management might obtain the benefits of "exception" reporting and control.
7. Management confidence in a punched-card system for inventory control must be attained and maintained through continuous, accurate reporting.

With these objectives in mind, the administrative staff of Fulton, together with the consulting firm, set to work.

INSTALLING THE SYSTEM

To insure the accuracy of the inventory report, proper control paths were set up at the onset. It was determined that the inspection winders would be the best initial control point for both the grey and the finished inventory, and consequently complete checks were established on yards over winders, pieces, and pounds at these points. Outside purchases were completely rechecked against receiving book entries. Relief of inventory through billing was also rechecked against copies of the piece goods ticket which was torn from each piece or bale as it was put through shipping.

The over-all control for this was located in the mill's tabulating department which is equipped with International Business Machine Corporation punched-card accounting machines. *(Cont. on p. 540)*

* A study of paperwork at Fulton Bag revealed that a daily report of inventory condition could be mechanically produced on existing equipment with a net direct payroll saving of more than $10,000 a year. The report on this study, which first appeared in *Textile Industries*, was written by C. H. Burns, vice president-finance, Fulton Cotton Mills, Inc., Atlanta, Ga., with the assistance of Werner Textile Consultants, New York.

A banker makes a decision

a financial leader first, your banker is likewise a man of community affairs

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In a nutshell, a banker has to be a civic doer as well as a financial counsellor. By taking on community responsibility and learning what makes his neighbors tick, a banker makes his bank more useful every day.

When all's said and done, it's usefulness that makes commercial banking so important to the nation's economy and the American way of life.

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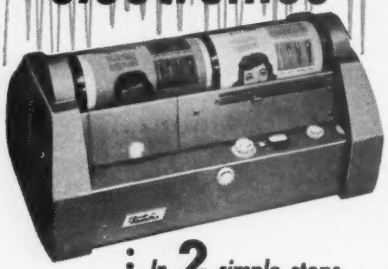

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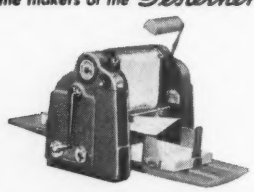

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Business Experience with Electronic Computers

Roger F. Brown

This month Controllers Institute Research Foundation releases its newest study. A prepublication copy was made available to Mr. Brown, director of Financial Planning, the Chesapeake and Ohio Railway Company, Cleveland, Ohio, whose comments on the new study follow.*

THE AURA OF MYSTICISM with which they have been surrounded by their most enthusiastic exponents has probably been a significant obstacle to the adoption of electronic computers for business applications. Seldom in business history have units of business machinery become so universally described in such picturesque but bewildering jargon. Terms such as "electronic brain," "memory capacity," "flip-flop circuits" and "binary digits" abound in the literature and trade talk. They have probably contributed as much to miscomprehension of electronic computer systems as has the advertising copywriter's fascination with the too often meaningless statistics on the speed with which the new machines can add or subtract.

"Business Experience with Electronic Computers" goes far toward dissipating this aura of mysticism with its very "down to earth" and matter-of-fact approach to the economic, organization, procedural and operating problems they present. (Nevertheless, even the brilliant authors of this remarkable study have found it necessary to depart from conventional semantics. Systems are described as being "powerful." "Master file" is used in describing systems designs without making clear the broad technical implications of the term. And the discussion of "computer repertoire" might well repel some of the technically timid among controllers.)

The Foreword makes clear that this book is aimed principally at those who have been assigned responsibility for making the initial decision and for the planning, supervision, control and ultimate success of the electronic program. Based on five years of direct personal experience with such responsibilities, my unqualified conclusion is—this is "must" reading for all who are in, expect to be in, or who may be considering the advisability of being in this situation. Failure to read this book could expose the uninitiated to the risk of needlessly expensive experiences.

The first third of the book (Part I) is devoted to experience to date in making the decision to employ an electronic computer. It discusses the value of the "feasibility study" in arriving at a correct decision. Included is an illuminating discussion of how the risk involved in making an uninformed decision might be reduced without adding materially in time and cost to the whole program of making an installation.

In the relatively earlier days of computer-feasibility studies there was an understandable tendency toward utmost caution in appraising the likelihood of success of a computer installation. In some cases systems were programmed in detail for more than one machine before a decision was reached. With the increasing acceptance of computers, a swing too far in the opposite direction might well occur. The economics of the feasibility study itself thus deserve careful attention. This section of the book should be of major assistance to those who are entering upon feasibility studies in deciding how far they should go before calling for a decision.

Included in this section are check lists of promising areas for computerization and critical questions to be asked. There are suggestions as to how to conduct the studies after areas have been selected. And there is an excellently impartial appraisal of the many considerations involved in selecting equipment. There should be few controllers who cannot find in this section the correct criteria to use in making the right decision for their companies.

Parts II and III, which constitute the second third of this book, review what has been learned about preparing for and introducing electronic equipment from the standpoint of company education, organizing and managing the electronic group, developing specific applications and conversion from prior methods.

These sections of the book were undoubtedly the most difficult for the authors to compile because of the great diversity of approaches which have been attempted and the even greater diversity of experiences which have resulted. The authors acknowledge this at the outset, and have bravely offered their own opinions in some controversial areas. Those of us who have been through the experience of preparing for and installing a computer are inclined to wonder, for example, whether some of the education and orientation effort might not have been overdone. We wonder whether there is really any satisfactory alternative to appraising the ability of computer programmers other than successfully performing computer programs. And some who may have postponed the delivery date in order to be better prepared may wonder whether they could not have used an earlier delivery to greater over-all advantage. *(Continued on page 524)*

* *Business Experience with Electronic Computers*, by B. Conway, J. Gibbons, and D. E. Watts.

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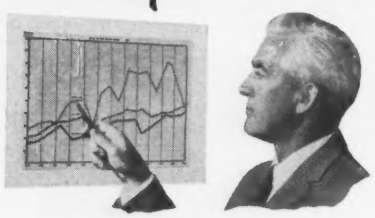

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There are some parts to these sections which many controllers may feel are quite technical. But the controller who will be assigned responsibility for successfully installing a computer cannot avoid some familiarity with the esoteric features of a newly advanced technology. They are a part of the enlarged kit of skills which are becoming assumed of modern controllership. The controller who doesn't understand what his programming staff is talking about may find himself regarded as the principal bottleneck in the flow of communications. Parts II and III will give him an excellent start toward avoiding the disadvantages of such a deficiency.

Parts IV and V deal with operating electronic equipment and relations with the equipment manufacturer. For those who have not yet installed a computer, the discussion of the position of the machine-operating group in the organization structure deserves especially careful reading. Finding the correct answer to this for a particular organization can go far toward making its job easier. And once the organizational format has been established, it is often too difficult to change. Internal control may dictate that the machine-operating group should be carefully separated from all the manual phases of input data processing and handling or distributing the output. Since most electronic machinery represents such a major investment, its efficient management and utilization may represent a primary business objective in itself. The careful attention the authors have devoted to this problem evidences their awareness of its sometimes critical nature.

Part V deals with relations with equipment manufacturers. It provides a useful check list of things upon which misunderstandings might be avoided by having specific agreements before the lease or purchase contract is executed. The office machinery industry has, in the aggregate, established enviable standards of service and customer relations. But new companies are entering the electronic field and practices are changing. It behooves the controller not to take too much for granted in regard to relations with the manufacturer.

Part VI concludes the book with a discussion of some unresolved questions and some thoughtful predictions for the next five years. It is interesting to note that while some of the unresolved matters relate to technical problems, many more relate to continuing problems in evaluating human performance, solving the human problems encountered in large-scaled change and finding better ways of communication with the human beings in other companies and in top-management areas. Yet the total list is surprisingly small, and answers are probably already under way to some of the problems.

The use of electronic data-processing machines for business applications is undoubtedly approaching an area of maturity. Otherwise this "voice of experience" could never have been written. It becomes a valuable contribution to the library of knowledge required for the mature practice of controllership.

Management's Role in EDP Study Released by NICB

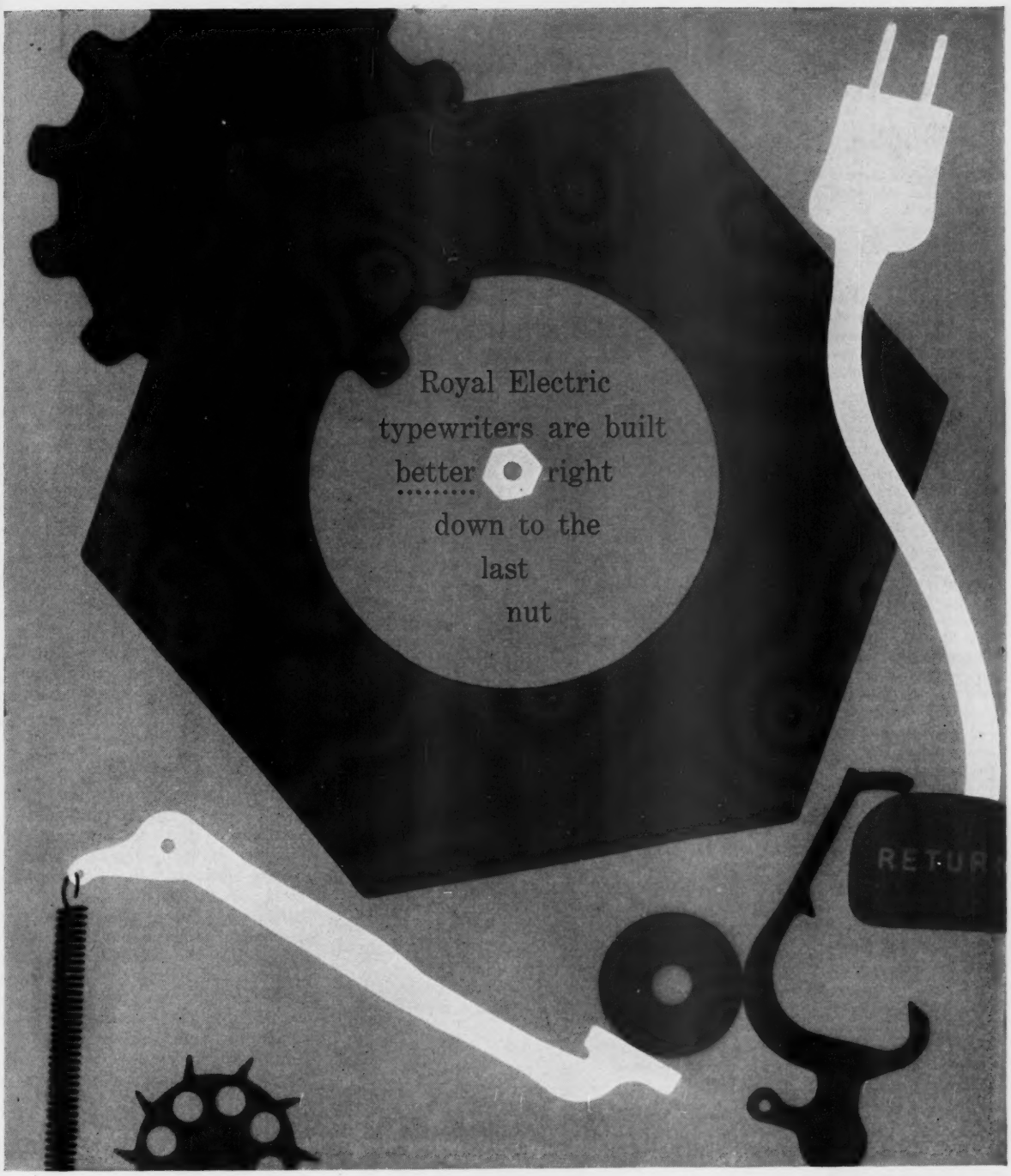
Company presidents, and in some cases boards of directors, have found they must take an active part in their computer programs because the investment can be substantial, methods of management control can be affected, company policies and practices may need alteration and organization changes may be required, according to a study released by the National Industrial Conference Board.

This study was conducted among 114 companies of different types and sizes which have had varying degrees of involvement with electronic data processing. Their experience indicates that once management has decided to investigate use of computers it has three principal duties to perform:

1. Establish the basic goals of the program and set down the policies necessary to reach them;
2. Develop an organization capable of making a sound investigation, see that responsibilities are properly delegated, and assure that adequate guidance and coordination are provided; and
3. Engage or authorize such outside assistance as is deemed desirable.

Opinion among the respondents is divided as to whether policy interpretation and planning coordination can be done best by an individual or a committee. But whether individuals or committees are used, experienced companies stress the importance of assigning the direction of computer programs to employes who have a good knowledge of the over-all operation of the business and a sound understanding of systems and procedures work.

Winning employe support for the computer program is an important step which many managements strive to accomplish before the system is put into operation, according to the NICB findings. Issuance of a clear statement of management's thinking on the long-range role of computers in the company and their probable effects on the present methods of doing business often helps develop middle-management support for a computer program. Other measures used successfully to gain support include education of employes, and allowing those affected to participate in planning computer programs.



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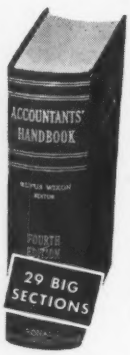

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Paging the New Books

BUSINESS EXPERIENCE WITH ELECTRONIC COMPUTERS*

By B. Conway, J. Gibbons, and D. E. Watts

Reviewed by JOHN T. PETTIT
Director, Industrial Dynamics
Hughes Aircraft Company
Culver City, California

Management in general is becoming more concerned than ever before with the application of electronic computers and other automatic business aids. It is finding that it is no longer possible to remain unconcerned with the details of running a program which absorbs so many dollars and which promises such revolutionary changes to its business way of life in the years immediately ahead, as do these electronic devices.

Furthermore, as more experience is gained in this relatively new field, managers are becoming aware that the hardware is not the whole story—in fact, not even the major part; the major part is the system. The organization and policy structure which supports the system, along with the hardware and associated programming, is what makes the system work. This volume has been compiled to aid managers in their growing need for understanding the practical applications of business electronics.

The book is admittedly an ambitious attempt to evaluate and summarize what has been learned to date by some of the companies pioneering in this field. It primarily deals with the first steps involved in developing a computerized system.

The authors do not attempt to be concerned with the power or cost of hardware. In fact, very little mention is made of hardware, but rather the method of making the studies required prior to installing the hardware.

The first consideration is the making of the decision as to size and scope of an electronics program; the second is carrying it out. The book is filled with check lists of questions to be answered, points to be recognized, etc., at each phase of development. For example, a very elaborate and useful list of objectives sought in installing EDPM is presented, and structured according to the relative importance of each.

The book is heavily slanted toward controllers who find themselves, of necessity, concerned with the initial study and its future implementation, but it is also valuable for its check lists to the EDP people who are responsible for directing the daily work, making the studies, and building the system.

The first part of the book discusses the original decision to make the study, the make-up of the team, the scope and length of the study, and the communications with the rest of the company during the study period. An interesting, though obvious, technique for shortening the length of the study period is described as "the theory of least negatives," which is to eliminate the unattractive alternatives at the earliest moment and to concentrate as quickly as possible on those of merit.

The study group as described would determine the work to be processed electronically, make up the flow charts for analysis, including the functional flow charts and the departmental work flow charts. From these they determine the operating requirements and opportunities and design the system. A method and procedure is outlined for estimating the number of programming steps required, machine capacity, preparatory and conversion costs, and estimated savings. A short check list is provided for use in selection of equipment, but it is too general to be of much practical value.

The second part of the book is devoted to discussions of a company-wide education program, beginning with the education of management. The make-up, selection, training, and organization of the EDP group is considered.

Part Three deals with the selection of problems, methods of approach, and an expected time table for progress. Some very general remarks are included on coding and building-in of controls in the programs.

Part Four is a general discussion of the EDP operating organization, its position in the corporate organization structure, and the mode of operation of the Machine Center.

Relations with equipment manufacturers are discussed in Part Five.

Part Six summarizes and attempts to look into the future developments to be expected over the next five-year period. An interesting observation is made by the authors—"Except in engineering and scientific matters, EDP has had relatively little impact on the real direction and management of the enterprise." The reason is possibly given in the authors' statement, "To the extent possible without imperiling the success of the installation, most companies to date have approached EDP via the route of advanced translation, staying reasonably close to present organizational and clerical concepts. . . ."

** Published by Controllers Institute Research Foundation, Two Park Avenue, New York 16, N. Y. $5.00.*

Financial Organization and Management of Business*

By Charles W. Gerstenberg

This fourth revised edition presents modern methods of organizing a business, financing its permanent and working capital needs, managing its income and surplus, expanding the business through internal growth and combinations, and recapitalizing or reorganizing it as conditions require.

Two new chapters—"Financial Statement Analysis" and "Public Policy"—have been added to this edition. The chapters on working capital have been expanded and those of less importance have been condensed. Otherwise, this follows the general outline of the previous edition, but it reflects changes in laws, practices, and social thinking that influence corporate financial policy and management.

** Published by Prentice-Hall, Inc., Englewood Cliffs, N. J. $9.00.*

Industrial Organization*

By Joe S. Bain

This book is primarily concerned with the complex of business enterprises (excluding banking or other financial firms) in their function as suppliers and sellers, or buyers, of goods and services of every sort produced by enterprise.

The first three chapters are introductory, devoted to the description of terms, concepts, and issues; to a survey of relevant theoretical constructs; and to some treatment of the general environmental background of American industrial organization.

The succeeding eight chapters constitute the core of the book, analyzing, on an empirical level, market structure, conduct, performance, and their interrelations in American industries.

The last four chapters are devoted to a compressed analysis of American public policies affecting competition, including antitrust and other policies.

** Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. $9.25.*

Statistics* By A. R. Ilersic

Basically an introduction to statistics, this 12th edition contains among other revisions new chapters on social and vital statistics; the chapters on sampling theory and significance tests have been largely re-written, and the material on economic and business statistics has been brought up to date.

Other sections cover elementary statistical methods, including tabulation, graphs and diagrams, averages, and measures of variation; more advanced methods such as sampling methods and regression and correlation; and economic statistics which include chapters on statistics in business and industry and quality control.

** Published by H.F.L. (Publishers) Ltd., 10 Earlham Street, Cambridge Circus, WC 2, London, England. $4.20.*

Common Stocks and Business Cycles* By Edgar Lawrence Smith

The author observes that "the most meticulous studies of statistical data and of relationships between different economic series, while valuable, left something to be desired. Some fundamental concept was missing."

Mr. Smith writes that a review of the past shows that certain rhythmic patterns in the booms and depressions, which have recurred in our economy over the centuries, were anticipated by similar or reverse rhythms in natural phenomena, and that mass psychology was greatly influenced by environmental change. In effect, certain changes in total environment, and hence in mass attitudes, resulted in subsequent changes in the direction of stock price averages, retail sales, etc.

The author outlines this discovery of cyclical probabilities and describes procedures formulated for the use of this concept in business, banking and investment management.

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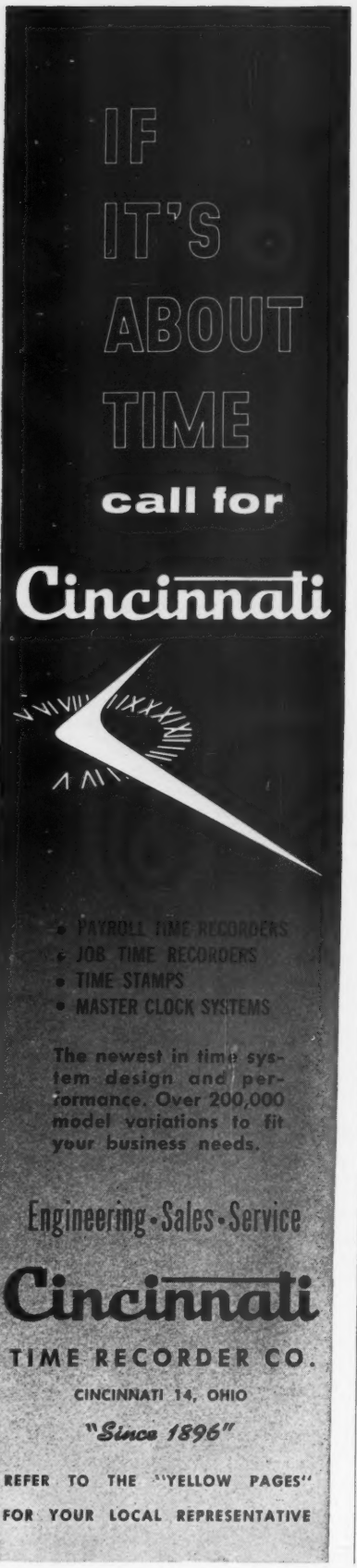

News of Other Organizations

NMAA

The National Machine Accountants Association has established an Educational Department to coordinate a long-range program of professional certification, formal education and training services and activities at all levels of the organization. John Buhr of Calgary, Alberta, Canada, has been appointed manager of the new department.

In addition to certification of the profession and the adoption of formal curriculums leading to degrees in machine accounting, the education program includes:

1. Cooperation with educational authorities in initiating machine accounting courses in schools, colleges, and universities.
2. Establishment of a national library and basic reference libraries in all chapters.
3. Service as a clearing house for receipt, study and distribution of technical information and developments, including the processing of all related inquiries and other educational correspondence.
4. Guidance and assistance in the planning and presentation of conferences, seminars and training programs, whether on a national, divisional or local level.

INCFO

Arthur A. Brown, comptroller and assistant secretary, Newport News (Va.) *Press* and *Times-Herald,* has been elected president of the Institute of Newspaper Controllers and Finance Officers, succeeding Richard N. Smith, vice president and treasurer, the Copley Press, Inc., La Jolla, Calif., who continues as a director for 1959-60.

Charles M. Hupp, assistant treasurer, New York *Herald Tribune,* was chosen first vice president, and Evert B. Person, assistant publisher-secretary and treasurer, Santa Rosa (Calif.) *Press Democrat,* was elected second vice president. Malcolm F. Cummings, office manager-advertising-accounting-credit, Boston (Mass.) *Globe,* was named secretary and Kenneth C. Doty, comptroller, Hackensack, N. J., Bergen Evening *Record,* was elected treasurer.

UNIVERSITY OF MIAMI

A top-management seminar is being sponsored November 15-20 by the University of Miami at the Galt Ocean Mile Hotel, Fort Lauderdale, Florida. Subjects to be discussed will include management controls, directing business expansion, measuring managerial results, management development, organization, executive compensation, profit-planning and new management techniques.

Among the high-ranking industrialists participating are Stanley De J. Osborne, president, Olin Mathieson Chemical Corporation; William T. Brady, president, Corn Products Company; H. C. Ramsey, chairman of the board, Worthington Corporation; Robert A. Weaver, Jr., president, The Bettinger Corporation; Arthur B. Langlie, president, McCall Corporation; Francis C. Brown, president, Schering Corporation; and Norman E. Alexander, president, Sun Chemical Corporation.

A separate program for executives' wives will also be presented during the week under the direction of Dr. Lillian Gilbreth and Mrs. Pearl Franklin Clark. The ladies will have regular business sessions and meet with the men at banquet sessions in the evening.

Further details may be obtained from Eugene E. Cohen, vice president, University of Miami, Coral Gables, Florida.

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Tables in the service give the taxable status of dividends paid on trust shares, stock of investment and mining companies and preferred stock of certain public utilities. Beginning with 1954, they show the amount qualified for dividend exclusion, 4% credit and corporate deduction under new tax law.

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Convenient tables tell what part of the premium paid per $1,000 bond bought during a given period can be amortized.

BONDS DEALT IN "FLAT"

A list of interest payments on bonds dealt in "flat" explains how these payments are handled for income tax purposes, often effecting tax savings.

PUBLIC UTILITY PREFERRED STOCKS

A list is provided showing those issues on which corporate stockholders may take "dividends received" credit.

"NUMBER OF SHARES" TABLES

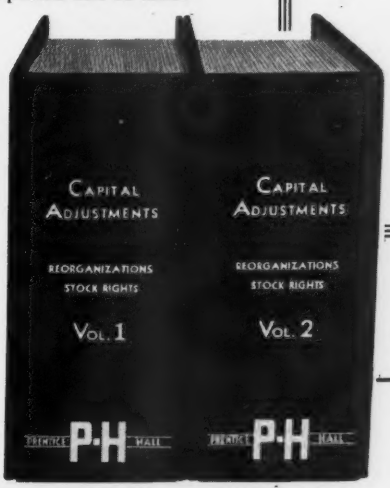
Showing the number of shares now held as a result of an original purchase, these tables allow for exercise of rights, declaration of stock dividends and aid identification of shares by lot.

WORTHLESS SECURITIES

A list of securities is given showing the year in which they became worthless for federal income tax purposes.

The CAPITAL ADJUSTMENTS SERVICE gives you the tax status of 15,000 securities in the following categories:

- Stock dividends
- Stock split-ups
- Stock subscription rights
- Exchanges of stock for other securities
- Property dividends
- Interest on bonds bought "flat"
- Worthless securities
- Amortization payments on convertible bond premiums
- Cash or property dividends paid by corporations
- Spin-offs
- Undistributed capital gain of regulated investment companies



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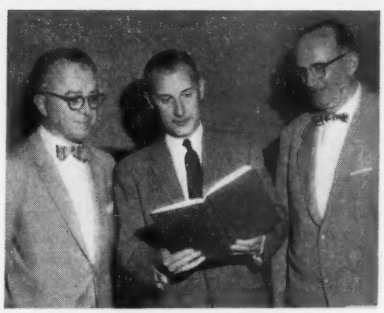
LONG SHOTS & CLOSEUPS WITH THE CONTROLLER CAMERA

Chicago, Illinois (LEFT ABOVE)

National and local Control officials of Controllers Institute of America met on September 18 at a session of the Midwestern Area Operations Committee at Executive House. Under the chairmanship of Institute Vice President Donald A. Robertson, controller and assistant secretary, Panhandle Eastern Pipe Line Company, Kansas City, Mo., the group reviewed national, Area and local matters as well as policies and activities of the Institute and its Research Foundation.

Participating in the discussions were *(left to right round the table):* James L. Peirce, national director at large, CIA; Herbert F. Walton, national director, CIA; Leo G. Swinehart, president of the Michiana Control; E. L. Hummel, national director, CIA; W. E. Busker, president of the Western Michigan Control; Paul Haase, managing director, CIA; Mr. Robertson; Roger A. Yoder, national president, CIA; Kenneth W. Hill, president of the Iowa Control; A. J. Mayer, national director, CIA; A. R. Seass, president of the Milwaukee Control; and George B. Whitfield, a trustee of Controllers Institute Research Foundation.

Also in attendance at the meeting but not present when the picture was taken were Raymond H. Giesecke, president of the Chicago Control, and Vincent T. Lorimer, president, Kansas City Control.



New York City (CENTER)

The forthcoming study, "Business Experience with Electronic Computers," published by Controllers Institute Research Foundation, is being examined by Foundation Vice President L. C. Guest, Jr., vice president and general controller, General Telephone & Electronics Corporation, New York. *Left to right* with Mr. Guest are Paul Haase, managing director of Controllers Institute, and W. Joseph Littlefield, research director of Controllers Institute Research Foundation.

The book is based on the experiences of 17 companies being a "synthesis of what has been learned from electronic data-processing installations." The research was conducted for Controllers Institute Research Foundation by members of the Management Advisory Services staff of Price Waterhouse and Company, New York. It will be released early in November 1959.

Philadelphia, Pa. (LOWER RIGHT)

J. S. Seidman, president-elect of the American Institute of Certified Accountants, spoke on "Fraud and Embezzlement" at the October 1 dinner meeting of the Philadelphia Control of Controllers Institute. *(Left to right)* Carl G. Schiesz, comptroller, the Budd Company, who introduced Mr. Seidman; Edward M. Blanchard, president of the Philadelphia Control and treasurer, Arcors Corporation; Mr. Seidman who is partner of Seidman & Seidman; Donald P. Jones, Eastern Area vice president of Controllers Institute and comptroller, Sun Oil Company; Roger A. Yoder, national president of Controllers Institute and vice president, Detroit Steel Corporation; and Stuart W. McLaughlin, treasurer, Controllers Institute and comptroller, West Virginia Pulp and Paper Company.

(TOP OF FACING PAGE)

Members of the Eastern Area Operations Committee of Controllers Institute

LONG SHOTS & CLOSEUPS WITH THE CONTROLLER CAMERA

met on October 1 to review national and local activities.

Seated are Institute Vice President Donald P. Jones of Philadelphia who served as chairman of the meeting; Arthur L. Boschen of New York, Controllers Institute Research Foundation trustee; Stuart T. Henshall of Philadelphia, national director; Edward M. Blanchard, president of the Philadelphia Control; L. E. Robertson, president of the Long Island Control; and A. O. Savage of New York, CIRF trustee.

Standing are Institute President Roger A. Yoder of Detroit; Herbert H. Blevins of Newark, general chairman of the Eastern Area Conference at Pocono Manor next May; Warren M. Maule, Institute director and chairman of the CIA national Admissions Committee; L. Keith Goodrich, Institute director and chairman of the CIA Budget and Finance Committee; Paul Haase, managing director of the Institute; Stuart W. McLaughlin, CIA and CIRF treasurer; J. McCall Hughes, chairman of the Institute's Board of Directors; H. L. Burrough, president of the District of Columbia Control; Harold R. DeJager, president of the New York City Control; Lewis N. Miller, president of the Richmond Control; and John R. Reuling, president of the Baltimore Control.

Others in attendance at the all-day session, which covered Institute policies and programs, included *(left to right):* Joseph J. Schofield, Detroit Control president; E. T. Fitch, Pittsburgh president; Harold B. Jackson, president of the Toledo Control; Eugene P. Heiles, national director from Toledo; James E. Spaude, director of the Cleveland Control; Messrs. Yoder and Eaton; Paul Haase, Institute managing director; Roy T. Dilley, Indianapolis president, sitting behind Paul Langdon, national director from Columbus; James J. Cone, Louisville president, sitting behind Louis T. Huser, president of the Cincinnati Control; C. K. McCracken, national director from Cincinnati; and Arthur G. Green, Columbus president.

Detroit, Mich. (CENTER RIGHT)

On September 28, prior to the Detroit Control's dinner meeting honoring Roger A. Yoder, president of Controllers Institute, CIA officials of the North Central Area met under the chairmanship of Area Vice President Edward H. Eaton of Pittsburgh.

Mr. Eaton is sitting in the center at the head of the table; Mr. Yoder on his right.

(LOWER LEFT AND RIGHT)

James F. Lillis, national director from Detroit, presents Mr. Yoder with a gift of a leather attache case from the members of the Detroit Control in recognition of his election to the office of president of Controllers Institute; and Detroit Control President Schofield gives Mr. Yoder a certificate honoring his service as Detroit's president (1950-1951). All other past presidents of the Detroit Control were honored at the same dinner and presented with certificates of appreciation.

Reporting of Taxes

(Continued from page 509)

Now to take a look at the 1958 income statement of Humble, our other star performer *(Chart K)*. The general format was similar to that of Continental. By featuring fewer items of deductions, however, Humble also seems to have effectively pointed up the four important participants benefiting from its gross revenues. These are, of course, (1) suppliers (from purchases of crude, products, and services), (2) employes (in salaries, wages, and employe benefits), (3) governments (taxes), and (4) shareholders (net income).

CHART K

Humble Oil & Refining Company and Subsidiary Company

STATEMENT OF INCOME
for the year ended December 31, 1958

	Millions
REVENUE	
Sales of crude oil	$ 531.2
Sales of products (including excise taxes of $48,840,634 in 1958 and $49,081,292 in 1957)	586.6
Sales of natural gas	65.0
Other sales and services	21.1
Total	1,203.9
Nonoperating revenue	1.3
TOTAL REVENUE	1,205.2
COSTS, EXPENSES, AND TAXES	
Purchases of crude oil, products, materials, and services	679.4
Salaries, wages, and employe benefits	149.3
Taxes (see below)	110.8
Depreciation, depletion, amortization, and retirements	100.6
Surrendered leases	28.6
TOTAL	1,068.7
NET INCOME	$ 136.5

In its comments accompanying the financial statements *(Chart L)*, Humble gave complete details on its tax bill. The total taxes featured in the income statement amounted to $110,800,000, or just over 80 per cent of Humble's net profit for the year. Again, the comment at the bottom of this little table is of interest—the statement that the classification of taxes was changed in 1958 to include excise taxes, also that this change had no effect on net income.

CHART L

Humble Oil & Refining Company

EXCERPT FROM FINANCIAL COMMENTS

Humble's taxes of $110,864,000 were $3,890,100 less than in 1957. The principal types of taxes comprising Humble's total tax bill are shown on a comparable basis in the following table:

	Millions	
TAXES	**1958**	**1957**
Excise taxes		
On products sold	$ 48.8	$ 49.1
Other	1.1	2.0
Production	22.3	25.1
Ad valorem	18.3	17.2
Federal income	16.0	17.0
All other	4.3	4.3
	$110.8	$114.7

State production taxes, reduced because of lower crude oil production, accounted for most of the decrease. In 1958, the classification of taxes was changed, with no effect on net income, to include excise taxes on products sold.

CONCLUSIONS

1. Excise taxes (whether specifically levied on the manufacturer, distributor, or dealer) are part of the company's gross revenues.
2. The consistent practice in the tobacco and liquor industries is to include excise taxes in gross revenues.
3. The company is generally responsible for making the payments to governments.
4. An excise tax is just another form of levy by which governments raise necessary revenues.
5. Taxes in all forms are a cost of doing business and, in the end, must be recovered in the price to the customer.
6. More and more, business (and especially the corporation) has become the great tax collector even though all taxes are ultimately borne by the individual or consumer.
7. It is management's responsibility to have financial statements report the entire tax bill, whatever form the levy may take.

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Where are control executives' responsibilities stated?
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How big is the control executive's department?
What is his employment and experience background?
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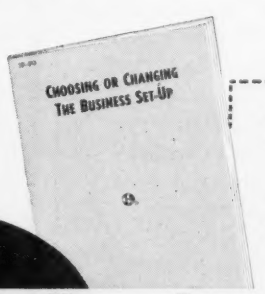

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Why They Don't Use Direct Costing

"We do not use direct costing mainly because the method is not recognized for income tax purposes and presents problems in inventory valuation. We get results similar to direct costing by other more conventional methods (marginal profit concept)."

Thus one company answered Controllers Institute Research Foundation's query on why they did not use direct costing. Another reported that a combination of standard costs on standard items and job costs on specialties best answered its needs.

One respondent uses this method to some extent but does not call it direct costing. The only period cost charged to departmental expenses is depreciation, which is disregarded as far as responsibility accounting is concerned. The only other indirect cost is the miscellaneous plant expense account which, including depreciation chargeable to all departments, runs about 8% of the total cost. They felt little could be gained by converting to direct costing and their accountants are concerned with the attitude of the Internal Revenue Bureau if they were to reduce their inventory values by 8%—a substantial reduction.

Two other companies reported the additional effort involved in such a change-over would not be worth while—changes which would be required in financial statements and other reports, plus problems which would arise from the revaluation of inventory.

Where a direct costing approach is called for, one company replied, variable cost analyses are used as a management aid, but this does not include financial statements. Operating reports hold managers accountable for direct controllable costs; major products are costed at both full and variable cost; and they do not engage in break-even chart and profit volume ratio analysis.

"However," they continue, "we cannot say that we close our books on or value our inventories at direct cost . . . we . . . classify ourselves as being on a full absorption cost basis. Fixed cost absorption is based on normal operations (not 100%) with any operation over or under being classified as volume gain or loss.

"Our merchandising approach emphasizes first full normal cost and an adequate return on investment. There are many occasions where we deem it significant to go beyond this and point out the marginal balance return of products, both as an aid to selective marketing in good times and as a decision-making tool to the possibilities of utilizing excess capacity in hard times.

"Thus, we feel our costing system gives us the advantages of both direct and absorption costing.

"The primary reason we haven't adopted direct costs exclusively for all purposes is that we do not believe any significant advantage would be gained thereby. Our mix of products covers a broad range of varying percentages of material and conversion effort. Over- or underabsorption of fixed expense is explained to management each period in the financial statements. Analysis of this variance in terms of the products which contributed to it on a 'booked basis' would probably not lend anything more to management's present understanding of company profit reaction with changes in sales volume. With volume variance being measured as a matter of routine along with other reasons for costs being different from standard, the oft-repeated arguments in favor of 'booking' direct costs appear to us to be academic."

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Corporate Aid to Education

Three hundred and fifty-two companies responding to a survey conducted by the Council for Financial Aid to Education, Inc. reported they gave $48,771,277 (or 0.27 per cent of their combined net income before taxes) to education during 1958.

The amount of money contributed by the 352 reporting companies represents approximately 36 per cent of the $136.5 million which, the Council estimates, all U.S. business gave to education in that year.

The most significant observation from this third biennial survey of financial support to higher education by business is that the trend of corporate aid to education, which was up in 1956, advanced even more strongly during 1958. The most phenomenal rate of increase was shown by the banking group—210 per cent—followed by the utilities companies with an increase of 92.6 per cent.

They Rate the Boss

Technical workers at the headquarters plant of Esso Research and Engineering Company, Linden, N. J., are supplying their supervisors with personalized analyses via "Rate Your Supervisor" questionnaires. Each man gets a report on himself summarizing the opinions and a report of how other supervisors are rated as a group. Considered a supervisory development tool, the questionnaires cover four general areas—personal traits, results achieved, techniques, and comments, where the workers are asked to spot specific strengths and weaknesses and make suggestions for improvement. Respond-

ents are not identified. The program seems to be paying off with three-quarters of the supervisors willing to go through the mill a second time.

Flexible Automation

Six automated machines for producing tailor-made parts weighing as much as 90 tons were installed at the General Electric Company's steam turbine-generator department at Schenectady. With these machines, design changes on huge pieces of equipment are accomplished by changing magnetic tapes or punched cards, resulting in the elimination of set-up time and special re-tooling. This economical approach to push-button production of small lots has been described as "flexible automation." One job which formerly took 16 weeks between completion of the engineering drawings and production, plus 60 man-hours of production time, can now be turned out 45 minutes after a simplified engineering drawing has been completed and programmed on punched cards.

American Capitalists

According to the New York Stock Exchange's 1959 Census of Shareowners, 12,490,000 Americans own shares in publicly held corporations, nearly double the 1952 total and 45 per cent above 1956. Other items: one out of eight adults is now a shareowner; almost half of all shareowners are in the $5,000 to $10,000 income range; one out of five shareowners first acquired stock through an employe stock purchase plan; and the largest single group of shareowners are housewives who number four million.

Cut Mailing Costs on Annual Reports

Company annual reports, looking more like professional magazines every year, have begun to be mailed like magazines—without envelopes. At least four companies have broken with the tradition and trouble of inserting annual reports in large envelopes, according to the New York Stock Exchange.

Besides saving on postage and handling costs, reports mailed this way are expected to attract immediate attention. The four companies that have pioneered in the simpler mailing procedure are Florida Power & Light, first to take the step four years ago, Northern Illinois Gas, Swift & Company, and Commonwealth Edison.

Money Back

An additional source of revenue for a growing number of cost-conscious companies is found in their old freight bills. These bills are turned over to freight audit firms who, for 50 per cent of recovered overcharges, go through old bills for unintentional errors in billing. The 1958 recession and more complex rate structures in freight operations are credited for the increasing interest in freight audits.

For what it's worth...

How fixed are "fixed" assets?

from the Clients' Service Bulletin of The American Appraisal Company

The mere mention of the term "current assets" brings to mind such items as cash, inventories, and accounts receivable. These assets are considered short-lived, mobile and changeable; yet, during their comparatively short life, an accurate account is kept of each item until it clears through the records.

Trend to relocation

Can "fixed" assets—the plant itself, buildings and equipment—go through a metamorphosis and emerge as assets necessitating similar financial control? By time-honored precedents, manufacturing facilities have, until recently at least, been designated as "fixed" with all the permanency, long life and immobility that the word implies.

In recent years many plants have relocated to take advantage of more favorable sources of raw materials, better transportation, available labor and nearness of markets. Existing equipment is also subject to accelerated obsolescence, abandonment, changes in use, reconstruction or replacement. Are such assets "fixed" in view of the existing trends to improvement or change?

Properties "on the move"

With the possible exception of land, "fixed" assets are not fixed in the sense that they are permanent. Some future event or decision of management may cause the continued use of the "fixed" assets to be terminated more quickly than anticipated because of sale, abandonment or obsolescence.

In this era when plant properties —often the largest item on the balance sheet—can be said to be on the move, it is desirable to provide for their control and accounting as effectively as for current assets. This is possible through basic unit property records kept constantly up to date to reflect changes that have actually taken place or that may be contemplated by management.

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Personal Notes

TOP MEN . . .

The election of **J. H. Clawson** as president of Puget Sound Power & Light Company, Seattle, Wash., was announced recently. Mr. Clawson has been an active member of Controllers Institute for many years and is a past president of the Seattle Control and a past national director of the Institute. . . . General Foods Corporation, White Plains, N. Y., has elected **Wayne C. Marks** as president. He is a past president of the New York City Control, Controllers Institute, and a past national director. Mr. Marks has also served as a trustee and vice president of Controllers Institute Research Foundation. . . . **Alfred A. Smith** has been elected president and general manager of Black, Starr & Gorham, Inc., New York.

COMPANY CHANGES . . .

Union Oil & Gas Corporation of Louisiana, Houston, Texas, recently announced that **Daniel B. Lovejoy** is now senior vice president and **Claude C. Harris, Jr.** was named controller.

L. E. Rast, recently became assistant comptroller of the American Telephone and Telegraph Company, New York. . . . He had been general accounting manager of one of its subsidiaries, Southern Bell Telephone with offices located in Jacksonville, Fla.

ADDITIONAL DUTIES . . .

Charles Rinderle, Jr., has been elected vice president of Southwest Steel Rolling Mills, Los Angeles, Calif., as well as of Finkelstein Supply Corp. of the same city. . . . **Harry Jeffries,** director and executive vice president of Sinclair Oil Corporation, New York, was also elected chairman of the Finance Committee, a newly created post. . . . **F. J. Sullivan** has become vice president and treasurer of Federal Screw Works, Inc., Detroit, Mich.

PROMOTIONS . . .

Andrew J. Kelley is now controller of United-Carr Fastener Corporation, Boston, Mass. . . . **Benjamin H. Askew** recently became assistant to the treasurer of International Business Machines Corporation, New York. . . . **Edwin L. Getting** has assumed the responsibilities of comptroller of Pullman Company, Chicago, Ill.

MR. CLAWSON

MR. MARKS

MR. ALFRED A. SMITH

MR. JEFFRIES

MR. ASKEW

EXTRACURRICULAR ACTIVITIES . . .

C. Robert McBrier, vice president-finance of Woodward & Lothrop, Washington, D. C., has been re-elected chairman of the Electronics Committee of the Retail Research Institute of the National Retail Merchants Association. **James Caldwell,** controller, Montgomery Ward, Chicago, Ill., is among those who will serve on the committee with Mr. McBrier. . . . **W. I. McNeill,** retired vice president-controller, General Aniline and Film Corporation, now a management consultant in West Hartford, Conn., is chairman of the Greater Hartford Chamber of Commerce Advisory and Consultation Service. . . . **Thomas C. Davis,** vice president, E. I. du Pont de Nemours & Company, Inc., Wilmington, Del., was elected a director of the American Management Association.

Among the new members appointed to the Planning Council of the AMA's Finance Division are **Robert B. Curry,** vice president and comptroller, Southern Railway System, Washington, D. C.; **James J. Doyle,** director of finance, Port of New York Authority, New York; **Kenneth R. Rickey,** vice president-treasurer, Lenkurt Electric Company, Inc., San Carlos, Calif. **B. A. Olerich,** vice president and treasurer,

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Abbott Laboratories International Co., Chicago, Ill., was appointed to the International Management Division of the Council.

Harold E. Williams, secretary of the American Thread Company, New York, chaired the two-day conference of textile officials held at Greensboro, N. C., on September 16 to discuss and share their knowledge and experience in the data-processing field.

NEW CONNECTIONS . . .

Robert F. Anderson was appointed assistant to the president, Gibson Art Company, Cincinnati, Ohio. . . . **Leonard F. Beckers** is now assistant to the director of finance of Ampex Corporation, Redwood City, Calif. . . . **Edwin P. Bulow** has become treasurer of the Marley Company, Kansas City, Mo. Mr. Bulow is a past president of the Kansas City Control of Controllers Institute.

The appointment of **Hylan Freed** as controller of Transitron Electronic Corporation, Wakefield, Mass., was announced recently. . . . **D. R. Gilmaster** has assumed the responsibilities of vice president and treasurer of Canadian Food Products Limited, Toronto, Ontario, Canada. . . . **John F. McGovern, Jr.** has joined Machlett Laboratories, Inc., Springdale, Conn., as controller.

The Escambia Chemical Corporation, New York, recently announced the appointment of **L. T. Murphy** as treasurer. . . . **Ira Nelson Tuck** is now controller of the Kratter Corporation, New York. . . . **M. S. Pheils** has become controller of Buckeye Incubator Company, Springfield, Ohio. Mr. Pheils is a past president of the Fort Wayne Control of Controllers Institute. . . . **R. G. Parkhurst** has joined Engis Equipment Company, Chicago, Ill., as assistant to the treasurer. . . . **E. Hoover Duff** recently became controller of the Bowling & Billiard Division of Brunswick-Balke-Collender Company, Chicago, Ill.

Daniel G. Schuman recently assumed the responsibilities of comptroller of Bausch & Lomb Optical Company, Rochester, N. Y. . . . **Donald F. Rowland** has joined New Orleans East Inc., New Orleans, La., as vice president and controller. . . . **F. J. Griffin** is now secretary of Novamont Corporation, New York. . . . **William Mewhort** was recently appointed to the office of vice president of Studebaker-Packard Corporation, New York. . . . The appointment of **Carl E. Nelson** as budget manager of Fairmont Foods Company, Omaha, Nebr., was announced recently.

NEW DIRECTORS . . .

Recently named to the Boards of their respective companies are **L. S. Larson,** vice president-finance and treasurer, Standard Products Company, Cleveland, Ohio, and **Frederick P. Hagaman,** controller, Esso Standard Oil Company, New York.

HONORS TO . . .

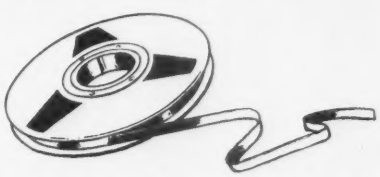
Wm. Herbert Carr has been appointed a member of the newly formed national Advisory Committee for the Graduate School of Business, Stanford University, Stanford, Calif. . . . **Edward L. Fortin,** vice president and treasurer, Selas Corporation of America, Dresher, Pa., was honored recently at a testimonial dinner commemorating his 25 years with the firm.

SPEAKERS . . .

William J. Hogan, executive vice president-finance of American Airlines, New York, was one of the speakers at the Pacific Southwest Credit Conference held recently at Los Angeles, Calif.

WRITERS . . .

John S. Woodbridge, comptroller of Pan American World Airways, Inc., New York, authored an article which appeared in the October issue of the *NAA Bulletin,* on the subject of "The Inventory Concept of Accounting as Expressed by Electronic Data-Processing Machines and Applied to International Air Transportation."



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Should You Set Up A Finance Subsidiary?

(Continued from page 503)

4. *A finance subsidiary can be used to acquire and lease back capital equipment.* Just as a finance subsidiary can be used to provide funds for receivables and to lease equipment that it manufacturers for others, so also can it be used to acquire capital equipment for its own use. This would include real estate, machine tools and automobiles, much of which many companies are already leasing from outsiders.

5. *A finance company can be used to place receivables under tighter control.* A finance subsidiary can be in a better position to administer credit and collect accounts than its parent corporation. This would be due to the independent status of the subsidiary, the fact that each transaction is typically supported by a formal legal instrument and the orientation of the management of the finance subsidiary.

A word of caution here. The reverse can also be the case. It is especially important that a finance subsidiary be soundly managed and not be subject to pressure from the marketing organization of the parent company. Each transaction must stand on its own merits. Unless it does, there is always a danger that the receivables carried by the finance subsidiary will be simply those that nobody else wants because they are unsound.

6. *A finance subsidiary can enhance the return on capital employed of the parent company.* Because of the leverage of its capital structure, a finance company expects a lower rate of return on its assets than does the typical manufacturer. For example, 20 per cent may be considered to be a reasonable return for a manufacturing company to earn on its assets before taxes. On the other hand, a finance company typically earns less than five per cent on its total assets before taxes. This means that a parent manufacturer can increase its return on capital employed *if* it can trade assets earning less than five per cent with the subsidiary for cash which can be employed to earn 20 per cent.

7. *A finance subsidiary can be a profitable operation in its own right.* Well-managed industrial finance companies generally earn between 12 and 15 per cent on their equity capital. They have enjoyed a substantial rate of growth in recent years. However, it should be emphasized that these companies have a sufficient volume in most locations in which they do business to justify the fixed administrative service and collection costs which are involved at each location.

What is the minimum volume required to support a finance subsidiary?

That varies, of course, with the rates charged and the related service costs. However, in my opinion, it is very difficult to justify setting up a finance subsidiary unless the average loans outstanding are in excess of $1 million. You can't skimp on management costs and smaller finance companies must generally pay more for the money that they borrow than the larger companies.

MAKING YOUR DECISION

In the final analysis, a decision to set up a finance subsidiary must depend on a careful analysis of the economics involved in your situation. The other alternatives which are available must be explored. There is no pat answer. There are many pitfalls which must be considered.

There is a danger that if money becomes more available in the future, distributors, dealers, and consumers will turn away from finance companies to their banks. A serious dip in the economy could raise havoc with collections. Inept financial management, dominance from the marketing organization, inadequate volume or disproportionate service costs could all take their toll.

Finance subsidiaries can offer interesting possibilities. But before you leap, be sure that you know what you are getting into.

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Concentration of Manufacturing Holds Steady

No real evidence of across-the-board increases in concentration among manufacturing industries was found in a study of this subject by the National Industrial Conference Board.

These findings are based on a detailed analysis of concentration ratios, a measure designed to represent the share of the market accounted for by the largest companies. The concentration ratios referred to are computed in terms of the value of shipments in each manufacturing industry.

A partial summary of findings show:

Industries with the highest concentration ratios are on the average less than half the size, in terms of value of shipments, of those industries with the lowest concentration ratios.

Of the 447 manufacturing industries studied, nine had concentration ratios of 90 per cent or more in both 1947 and 1954. At the other end of the concentration scale, there were 19 industries with ratios of nine per cent or less in 1947 and 22 in 1954. Twenty-six industries had concentration ratios of 80 per cent or more in 1947 and 31 industries were in this bracket in 1954. At the other end of the scale, there were 61 industries with ratios of 19 per cent or less in 1947 and 82 in 1954.

Of the 447 industries, 145 had increases in concentration of two percentage points or more in the 1947-1954 period, while 135 had decreases of two percentage points or more. Twenty-six industries had increases in concentration of ten percentage points or more between 1947 and 1954, while 23 had corresponding decreases in concentration.

The largest increases in concentration together with the largest losses in numbers of companies occurred in declining industries or in industries which were expanding the value of their shipments only moderately in the 1947-1954 period. Conversely, the largest decreases in concentration combined with the most marked increases in companies occurred primarily in industries whose shipments were expanding most rapidly.

Wanted: Good Cost-Control Executives

(Continued from page 518)

low that you are not being considered for the position.

The best recommendation is to ask an executive friend to answer the ad for you —not for himself—and wait for a response.

It is also sensible policy to place a "situation-wanted" advertisement in trade or professional magazines. Top management people read trade and association magazines regularly. "Situation-wanted" advertisements placed in newspapers rarely draw as well as those placed in trade magazines.

When the opportunity comes for you to be interviewed, prepare yourself. Stick to your field. Do not try to answer every question put to you if you haven't got an answer. A forthright "I don't know" is much better than a roundabout excursion on what you hope might be the answer. In all probability, the employer is asking a specific question because it is a very real problem to him; and it is quite possible that you will not come up with the answer after a 15-minute briefing about his company.

But the most important point to bear in mind in any thinking about you and your position, is this: *Do you really want to make a change of position outside your company?* It may well entail moving to another area of the country, or moving to a different size or different type of community. And another aspect to be considered is the attitude of the members of your family. *How well would they appreciate a change of community?*

Finally, ask yourself if the new position means that much to you—in money, authority, increased responsibility and general well-being.

It's your future, so think about it wisely and well.

CHANGING YOUR ADDRESS?

Notice of change of address for THE CONTROLLER should be received in the editorial offices of THE CONTROLLER, Two Park Avenue, New York 16, N. Y., before the first of the month to affect the following month's issue. For instance, if you desire the address changed for your January issue, we should be notified of your new address before December 1. *Be sure to include your postal zone as well as your old and new address.*

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PRODUCTION SCHEDULING

FULTON BAG AND COTTON MILLS
ATLANTA, GEORGIA

STATUS OF INVENTORY & SALES

DATE

DATE	COMMODITY	STYLE	FINISH CODE	FINISH	WIDTH	QUALITY	SPECIAL CODE	INVENTORY	DUE DATE	TOTAL OBLIGATION	PAST DUE OBLIGATION
5 08 8	12	592	001	G	030	2	000	19373	6 8		
3 11 8	12	592	001	G	031	1	000	2735	6 8		
2 25 8	12	592	001	G	031	2	000	829	6 8		
1 28 8	03	592	001	G	032	1	000	160	6 8		
4 21 8	12	592	221	FP	030	1	000	31557	6 8	42250	32250
4 16 8	12	592	221	FP	030	2	000	220	6 8		
4 14 8	12	592	233	FRF	030	1	000		6 8	12495	12495
2 04 8	12	594	001	G	032	1	000	621	6 8		
5 12 8	12	594	001	G	033	1	000	134701	6 8		
1 07 8	12	594	001	G	033	1	000		9 8	20000	
1 07 8	12	594	001	G	033	1	000		10 8	20000	
1 07 8	12	594	001	G	033	1	000		11 8	30000	
1 07 8	12	594	001	G	033	1	000		12 8	30000	
4 10 8	12	594	001	G	033	2	000	1700	6 8		
1 28 8	12	594	018		032	1	000	780	6 8		
1 28 8	03	594	099	D RAT	032	1	321	9092	6 8		
1 28 8	03	594	100	D LF RAT	032	1	322	1500	6 8		
1 28 8	03	594	05	D LF R DOT	032	1	322	1022	6 8		
2 28 8	12				032		321				

This report is mechanically produced on the tabulating machine from the punched cards. Four copies are made for distribution as follows: (1) Sales department; (2) production control; (3) warehouse; (4) tabulating department file.

Daily Report of Inventory Condition *(Continued from page 520)*

Without any additional equipment, and with a few changes in the clerical force of the tabulating department, it became possible to run a daily inventory control on punched cards, with net direct payroll savings (over the manual system) of more than $10,000 a year.

STATUS OF INVENTORY AND SALES

This type of control is based on the fact that all types of production, receipts, and conversion of merchandise are accounted for by means of preparing a punched card from the identification tag which is attached to each roll, bale, or carton of fabrics. This card serves the purpose of obtaining production records, usage reports, and shipping documents. The card then represents a perpetual inventory; and, by means of summarizing, it is used to prepare the daily Status of Inventory and Sales report.

This report is explained as follows:

Orders as written are sent to the tabulating department as they are typed. There they are key-punched into an Obligation Card which shows style of merchandise, due date, quantity sold, and due date of shipment.

The Production Cards are key-punched from identification tags as explained previously.

Usage is obtained by having each department accumulate tags removed from rolls as they are used. Shipping lists are prepared by receiving from the Shipping Department their copy of order attached to tags removed from goods when shipped.

Tabulating Department then pulls order card from obligation file and key-punches invoice number into order card. Inventory cards are removed from inventory file and placed behind order card. Tabulating Department then lists shipping documents.

All the above reports are balanced to predetermined controls and posted in total to Inventory Control Schedule.

These daily transaction cards are next sorted by stock number and matched against the Inventory and Sales Summary File. The transaction cards are summarized together and balanced. These new summary cards are then merged back into the Sales Summary File and Status of Inventory and Sales report listed.

BILLING TO BE MECHANIZED

Current plans call for billing and accounts receivable to be done on the data-processing equipment as well, which will also be a by-product of what is now a proper punched-card inventory control procedure. It is estimated that 85% of the necessary costs of billing on tabulators has already been saved by scheduling it as a by-product of the inventory, in addition to the elimination of five clerical workers.

REPORT SHOWS HOW LONG GOODS HAVE BEEN STORED

Age inventories are run once a month to indicate the current age and value of all material in pieces or pounds still being warehoused which are more than three months old. By examining their sales during the past month on each particular style, management receives valuable information and trend guidance on turnover and style acceptance. In this connection, colored ribbons are inserted in every roll, with each color denoting a different manufacturing period. The piece goods ticket is attached to the ribbon, so that more rigid control of the last-in-first-out problem can be effected from both the warehouse proper and the tabulating department.

PHYSICAL INVENTORIES NO LONGER A CHORE

The last physical inventory was taken on a Saturday and was completely checked and reported in detail by the Tabulating Department on Monday. This is considered to be an unusual feat for a mill of Fulton's size.

Because of these and other additional benefits derived since that time, the inventory system has now gained the complete confidence of management and is being used as a daily operating tool.

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ACCOUNTANT

Thirty years old, seeks overseas position Latin-America (preferably Colombia). Fluent Spanish. Eight years' diversified financial and accounting experience. Presently supervisor of major oil company. Construction and auditing experience. Box 2417.

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